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File 347:JAPIO Nov 1976-2004/Apr(Updated 040802)

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File 350:Derwent WPIX 1963-2004/UD,UM &UP=200454

(c) 2004 Thomson Derwent

File 348:EUROPEAN PATENTS 1978-2004/Aug W03

(c) 2004 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20040819,UT=20040812

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Set	Items	Description
S1	86	AU=(GETZINGER T? OR MALVAR H?)
S2	25	S1 AND COMPRESS?(3N)(IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED OR JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP)
S3	14	S2 AND QUALITY
S4	8	S3 AND (WEIGHT??? OR HIGH()FREQUENCY)
S5	5	S3 AND HIGH()FREQUENCY
S6	3	S5 AND WEIGHT???

6/5/1 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00234354

APPARATUS FOR ADAPTING A DIGITIZED SIGNAL PROCESSING SYSTEM FOR BLOCK  
PROCESSING WITH MINIMAL BLOCKING ARTIFACTS.

VORRICHTUNG ZUR ANPASSUNG EINES DIGITALSIGNALVERARBEITUNGSSYSTEMS FÜR  
BLOCKVERARBEITUNG MIT MINIMALEN BLOCKARTEFAKTEN.

DISPOSITIF PERMETTANT D'ADAPTER UN SYSTEME DE TRAITEMENT DE SIGNAUX  
NUMERISES POUR LE TRAITEMENT EN BLOC AVEC DES ARTEFACTS DE BLOCAGE  
MINIMAUX.

PATENT ASSIGNEE:

PICTURETEL CORPORATION, (828850), One Intercontinental Way, Peabody, MA  
01960, (US), (applicant designated states:  
AT;BE;CH;DE;FR;GB;IT;LI;LU;NL;SE)

INVENTOR:

MALVAR, Henrique, S. , SQS 306 Bloco C apt.403, 70353 Brasilia,DF,, (BR  
LEGAL REPRESENTATIVE:

Holdcroft, James Gerald, Dr. et al (31911), Graham Watt & Co., Riverhead,  
Sevenoaks, Kent TN13 2BN, (GB)

PATENT (CC, No, Kind, Date): EP 224583 A1 870610 (Basic)  
EP 224583 A1 881026  
EP 224583 B1 920422  
WO 8607479 861218

APPLICATION (CC, No, Date): EP 86904499 860603; WO 86US1212 860603

PRIORITY (CC, No, Date): US 740806 850603

DESIGNATED STATES: AT; BE; CH; DE; FR; GB; IT; LI; LU; NL; SE

INTERNATIONAL PATENT CLASS: G06K-009/36; H04N-007/133;

CITED PATENTS (EP A): US 4205341 A

CITED PATENTS (WO A): US 4224678 A; US 4224678 A; US 4261043 A; US 4602286  
A; US 4580158 A; US 4261018 A; US 4288858 A; US 4027257 A

CITED REFERENCES (EP A):

INTERNATIONAL CONFERENCE ON COMMUNICATIONS, CONFERENCE RECORD, Seattle,  
WA, 8th-12th June 1980, vol. 2, pages 31.7.1-31.7.5, IEEE; KING NGI  
NGAN et al.: "Lowpass filtering in the cosine transform domain"

IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH AND SIGNAL PROCESSING,  
Paris, 3rd-5th May 1982, vol. 2, pages 1203-1206, IEEE; H.K. NAGPAL et  
al.: "Memory architecture of a video-rate image convolver"

IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH AND SIGNAL PROCESSING,  
Boston, Massachusetts, 14th-16th April 1983, vol. 3, pages 1212-1215,  
IEEE; H.C. REEVE III et al.: "Reduction of blocking effect in image  
coding"

IEE PROCEEDINGS SECTION A a I, vol. 131, no. 5, part F, August 1984,  
pages 466-472, Old Woking Surrey, GB; D.E. PEARSON et al.: "Transform  
coding of images using interleaved blocks"

See also references of WO8607479;

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 870610 A1 Published application (A1with Search Report  
;A2without Search Report)

Examination: 870722 A1 Date of filing of request for examination:  
870527

Search Report: 881026 A1 Drawing up of a supplementary European search  
report: 880907

Change: 891108 A1 Inventor (change)

Change: 891115 A1 Inventor (change)

Examination: 900801 A1 Date of despatch of first examination report:  
900615

Grant: 920422 B1 Granted patent

Lapse: 921119 B1 Date of lapse of the European patent in a  
Contracting State: SE 920422

Lapse: 921125 B1 Date of lapse of the European patent in a  
Contracting State: NL 920422, SE 920422

Lapse: 921230 B1 Date of lapse of the European patent in a  
Contracting State: BE 920422, NL 920422, SE  
920422

Lapse: 930120 B1 Date of lapse of the European patent in a  
Contracting State: AT 920422, BE 920422, NL  
920422, SE 920422

Oppn None: 930414 B1 No opposition filed

Lapse: 991020 B1 Date of lapse of European Patent in a  
contracting state (Country, date): AT  
19920422, BE 19920422, IT 19920422, NL  
19920422, SE 19920422,

Lapse: 991229 B1 Date of lapse of European Patent in a  
contracting state (Country, date): AT  
19920422, BE 19920422, IT 19920422, LU  
19920630, NL 19920422, SE 19920422,

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	730
CLAIMS B	(German)	EPBBF1	673
CLAIMS B	(French)	EPBBF1	826
SPEC B	(English)	EPBBF1	4905
Total word count - document A			0
Total word count - document B			7134
Total word count - documents A + B			7134

6/5/2 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00533609 \*\*Image available\*\*

**METHOD AND SYSTEM FOR CAPTURING AND REPRESENTING 3D GEOMETRY, COLOR AND  
SHADING OF FACIAL EXPRESSIONS**

**PROCEDE ET SYSTEME DE CAPTURE ET DE REPRESENTATION DE GEOMETRIE 3D, COULEUR  
ET CONTRASTE D'EXPRESSIONS FACIALES**

Patent Applicant/Assignee:

MICROSOFT CORPORATION,

Inventor(s):

GUENTER Brian,

GRIMM Cindy Marie,

**MALVAR Henrique Sarmento**

Patent and Priority Information (Country, Number, Date):

Patent: WO 9964961 A1 19991216

Application: WO 99US12725 19990607 (PCT/WO US9912725)

Priority Application: US 9893590 19980608

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE  
GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK  
MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU  
ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH  
CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW  
ML MR NE SN TD TG

Main International Patent Class: G06F-015/00

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 17984

English Abstract

The method captures a 3D model of a face (260), which includes a 3D mesh and a series of deformations of the mesh that define changes in position of the mesh over time (e.g., for each frame). The method also builds a texture map associated with each frame in an animation sequence. The method achieves significant advantages by using markers on an actor's face (260) to track motion of the face over time and to establish a relationship between the 3D model and texture. Specifically, videos of an actor's face (260) with markers are captured from multiple cameras.

Stereo matching is used to derive 3D locations of the markers on each frame. A 3D scan is also performed on the actor's face with the markers to produce an initial mesh with markers (222). The markers from the 3D scan are matched with the 3D locations of the markers in each frame from the stereo matching process. The method determines how the position of the mesh changes from frame to frame by matching the 3D locations of the markers from one frame to the next. The method derives textures for each frame (280) by removing the dots from the video data, finding a mapping between texture space and the 3D space of the mesh, and combining the camera views for each frame into a signal texture map (240-246).

#### French Abstract

Ce procede de capture d'un modele tridimensionnel (3D) d'un visage (260) consiste a utiliser un maillage 3D ainsi qu'une serie de deformations de celui-ci, lesquelles definissent des changements de position du maillage dans le temps (par exemple pour chaque trame). Ce procede consiste egalement a construire une carte de textures, associee a chaque trame de la sequence d'animation, et il se revele tres avantageux en ce qu'il utilise des marqueurs sur le visage (260) d'un acteur, afin de suivre les mouvements du visage dans le temps et d'etablir une relation entre le modele 3D et la texture. L'invention concerne notamment la capture, a partir de plusieurs cameras, d'images video du visage (260) d'un acteur comprenant des marqueurs, la stereocorrespondance etant utilisee pour deriver des emplacements 3D des marqueurs dans chaque trame. Un balayage 3D est egalement execute sur le visage de l'acteur comprenant les marqueurs, afin de produire un maillage initial comprenant les marqueurs (222). Les marqueurs provenant du balayage 3D sont mis en correspondance avec les emplacements 3D des marqueurs de chaque trame, a partir du processus de stereocorrespondance. Le procede de l'invention permet de determiner les changements de position du maillage, de trame a trame, par mise en correspondance des emplacements 3D des marqueurs, d'une trame a la suivante, et de deriver les textures de chaque trame (280) par enlevement des points a partir des donnees video, par recherche d'une mise en correspondance entre espace de texture et l'espace 3D du maillage, et par combinaison des prises de vue de la camera pour chaque trame, dans une carte de textures de signaux (240-246).

6/5/3 (Item 2 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00134960

#### METHOD AND SYSTEM FOR ADAPTING A DIGITIZED SIGNAL PROCESSING SYSTEM FOR BLOCK PROCESSING WITH MINIMAL BLOCKING ARTIFACTS

#### PROCEDE ET SYSTEME PERMETTANT D'ADAPTER UN SYSTEME DE TRAITEMENT DE SIGNAUX NUMERISES POUR LE TRAITEMENT EN BLOC AVEC DES ARTEFACTS DE BLOCAGE MINIMAUX

Patent Applicant/Assignee:

PICTEL CORPORATION,

Inventor(s):

**MALVAR Henrique S**

Patent and Priority Information (Country, Number, Date):

Patent: WO 8607479 A1 19861218

Application: WO 86US1212 19860603 (PCT/WO US8601212)

Priority Application: US 85806 19850603

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AT BE CH DE FR GB IT JP LU NL SE

Main International Patent Class: G06K-009/36

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 11920

English Abstract

A method and apparatus for processing n-dimensional digitized signals containing at least two adjacent blocks of digitized sample values (Fig. 3). The digitized signal is transformed in accordance with a spatial transform operator (30). The spatial transform operator is characterized by similar size blocks to the blocks in the input signal, but is operative over blocks of the signal which extend beyond the nominal blocks in the signal by a predetermined number of sample value in at least one dimension (Figs. 5-8). The resultant signal may be similarly transformed by another spatial transform operator (38) to obtain an output transform signal. The latter signal is substantially free from blocking artifacts.

File 347:JAPIO Nov 1976-2004/Apr(Updated 040802)  
(c) 2004 JPO & JAPIO  
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200454  
(c) 2004 Thomson Derwent

Set	Items	Description
S1	30721	COMPRESS?(3N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED OR JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP)
S2	38406	COMPRESS?(3N) (CONTENT? ? OR DATA OR INFORMATION OR FILE? ? OR DOCUMENT? ? OR ARTICLE? ? OR TEXT? ? OR TEXTUAL OR EMAIL OR MAIL OR MESSAGE? ?)
S3	1748	COMPRESS??? (3N) (MAXIMUM OR MAXIMAL?? OR BEST OR HIGHEST OR GREATEST OR LARGEST)
S4	103050	SIZE(5N) (SMALL??? OR MINIMUM OR MINIMAL OR LOW??? OR NOMINAL OR LEAST)
S5	2798	S3:S4(10N) (DETERMIN? OR ESTIMAT??? OR ASSESS? OR IDENTIF? - OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPUTE OR COMPUTES - OR COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR DISCERN?)
S6	740510	QUALITY OR RESOLUTION OR INTEGRITY
S7	39620	(WEIGHT??? OR SCOR??? OR GRAD??? OR RATE? ? OR RATING) (5N)- (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED)
S8	70583	(WEIGHT??? OR SCOR??? OR GRAD??? OR RATE? ? OR RATING) (5N)- (JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP OR CONTENT? ? OR DATA OR INFORMATION OR FILE? ? OR DOCUMENT? ? OR ARTICLE? ? OR TEXT? ? OR TEXTUAL OR EMAIL OR MAIL OR MESSAGE? ?)
S9	6671	(HIGH())FREQUENCY()ENERGY OR COMPLEX? OR INTRICAT? OR INTRICACY) (5N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED OR MAIL? ?)
S10	6735	(HIGH())FREQUENCY()ENERGY OR COMPLEX? OR INTRICAT? OR INTRICACY) (5N) (JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP OR CONTENT? ? OR DATA OR INFORMATION OR FILE? ? OR DOCUMENT? ? - OR ARTICLE? OR TEXT? ? OR TEXTUAL OR EMAIL OR MESSAGE?)
S11	54	S1:S2 AND S5
S12	15	S11 AND S6
S13	72	S1:S2 AND S3:S4 AND QUALITY
S14	32604	COMPRESS??? (5N) (SMALL??? OR MINIMUM OR MINIMAL OR LOW??? OR NOMINAL OR LEAST)
S15	576	S14(10N) (DETERMIN? OR ESTIMAT??? OR ASSESS? OR IDENTIF? OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPUTE OR COMPUTES OR - COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR DISCERN?)
S16	132	S1:S2 AND S15
S17	24	S6 AND S16
S18	23	S17 NOT S12
S19	15	S1:S2 AND S3:S4 AND S14 AND QUALITY
S20	12	S19 NOT (S12 OR S18)
S21	60836	DENSITY(5N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED OR MAIL? ?)
S22	24490	DENSITY(5N) (JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP OR CONTENT? ? OR DATA OR INFORMATION OR FILE? ? OR DOCUMENT? ? OR ARTICLE? OR TEXT? ? OR TEXTUAL OR EMAIL OR MESSAGE?)
S23	1189	S7:S8(7N) (S9:S10 OR S21:S22)
S24	43	S1:S2 AND S23
S25	1	S1:S2 AND HIGH()FREQUENCY()ENERGY
S26	43	S24 NOT S25
S27	1498665	WEIGHT??? OR SCOR??? OR GRAD??? OR RATE? ? OR RATING
S28	717757	HIGH()FREQUENCY()ENERGY OR COMPLEX? OR INTRICA? OR DENSITY
S29	3295839	IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED OR MAIL? ?
S30	3989170	JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP OR CONTENT? ? OR DATA OR INFORMATION OR FILE? ? OR DOCUMENT? ? OR ARTICLE? OR TEXT? ? OR TEXTUAL OR EMAIL OR MESSAGE?

S31 730 S27(5N)S29:S30(5N)S28(5N) (DETERMIN? OR ESTIMAT??? OR ASSES-  
S? OR IDENTIF? OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPU-  
TE OR COMPUTES OR COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR  
DISCERN? OR ASSIGN??? OR GIVEN OR GIVING)  
S32 31 S1:S2 AND S31



12/5/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07552894 \*\*Image available\*\*  
METHOD AND PROGRAM FOR SCANNING IMAGE AND RECORDING MEDIUM

PUB. NO.: 2003-046734 [JP 2003046734 A]  
PUBLISHED: February 14, 2003 (20030214)  
INVENTOR(s): HABA YOSHIHITO  
APPLICANT(s): CANON INC  
APPL. NO.: 2001-235056 [JP 2001235056]  
FILED: August 02, 2001 (20010802)  
INTL CLASS: H04N-001/17; G06T-001/60; H04N-001/387; H04N-001/413

ABSTRACT

PROBLEM TO BE SOLVED: To limit the size of files, when reading images to make image files.

SOLUTION: The size of an image scanned and an upper limit file size are set, and based on these settings, a **resolution** for scanning the image is determined, and the data of the image scanned with the **determined resolution** is **compressed** to make an **image** file, whose **size** is equal to or **smaller** than the upper limit **size**. Further, multi-auto crop is coped with through **resolution** conversion, to make image files whose size is equal to or smaller than the upper limit size.

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12/5/2 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07365031 \*\*Image available\*\*  
METHOD AND DEVICE FOR STORING **IMAGE** FRAME BY **COMPRESSION** DEPENDING ON USER'S CHOICE

PUB. NO.: 2002-233528 [JP 2002233528 A]  
PUBLISHED: August 20, 2002 (20020820)  
INVENTOR(s): BRACKETT CHARLES CAMERON  
APPLICANT(s): GE MEDICAL SYSTEMS GLOBAL TECHNOLOGY CO LLC  
APPL. NO.: 2001-288041 [JP 2001288041]  
FILED: September 21, 2001 (20010921)  
PRIORITY: 00 667878 [US 2000667878], US (United States of America),  
September 22, 2000 (20000922)  
INTL CLASS: A61B-008/00; G06T-001/00; G06T-009/00; H04N-001/41;  
H04N-005/781; H04N-005/91; H04N-005/92; H04N-007/18

ABSTRACT

PROBLEM TO BE SOLVED: To provide an irreversible compression in unit of an image to a digital image.

SOLUTION: A user of a system can manually change a compression level applied to an image frame made stationary by use of a rotary dial 32. The obtained each **compressed image** can be observed on a display monitor 18 in real time. The user **determines** the **maximum compression** level to obtain enough diagnostic **quality** in a region of interest. The method and device can be applied to an arbitrary imaging device in the case of storing an image in a memory or in the case of transmitting an image to be stored in an external memory.

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12/5/3 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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03936872    \*\*Image available\*\*  
PICTORIAL COMMUNICATION EQUIPMENT

PUB. NO.:        04-301972 [JP 4301972 A]  
PUBLISHED:      October 26, 1992 (19921026)  
INVENTOR(s):    SUGIYAMA MITSUMASA  
APPLICANT(s):   CANON INC [000100] (A Japanese Company or Corporation), JP  
                  (Japan)  
APPL. NO.:      03-066233 [JP 9166233]  
FILED:          March 29, 1991 (19910329)  
INTL CLASS:     [5] H04N-001/41; G06F-015/66; H04N-007/13  
JAPIO CLASS:    44.7 (COMMUNICATION -- Facsimile); 44.6 (COMMUNICATION --  
                  Television); 45.4 (INFORMATION PROCESSING -- Computer  
                  Applications)  
JOURNAL:        Section: E, Section No. 1332, Vol. 17, No. 125, Pg. 102,  
                  March 16, 1993 (19930316)

ABSTRACT

PURPOSE: To confirm the picture **quality** of an image transmitted to the equipment of a communicating party by an operator and to reduce the mental burden of the operator by providing a means to calculate the density change of the color image, calculating the part of the large density change to easily degrade the **image** and executing the **compression**, extension and display of the part.

CONSTITUTION: A scanner part 1 inputs the color image and transmits color image data to a density change discrimination part 2. The discrimination part 2 divides the color image into the blocks of 128X128 dots, for example, calculates the density changes at the respective blocks and **calculate** the block having the **largest** density change. A **compression** part 3 **compresses** the color image data and transmits the **compressed data** to a communication control part 4, and the control part 4 executes the communication with the equipment of the communicating party and transmits the **compressed color image data**. An extension part 5 extends the **compressed color image data** and transmits an image corresponding to the block, which is calculated by the discrimination part 2, having the large density change to a display part 6, and the display part 6 displays the image.

12/5/4        (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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015253811    \*\*Image available\*\*  
WPI Acc No: 2003-314740/200331  
XRPX Acc No: N03-250506

Data compression determination **procedure e.g. for medical equipment, involves selecting a data compression procedure giving the highest compression factor**

Patent Assignee: SIEMENS AG (SIEI ); CHRIST T (CHRI-I); PRIHODA H (PRIH-I)  
; SCHMIDT V (SCHM-I); SCHNEIDER S (SCHN-I); SCHUELL H (SCHU-I); STRIEBEL  
W (STRI-I); ZAHLMANN G (ZAHL-I)  
Inventor: CHRIST T; PRIHODA H; SCHMIDT V; SCHNEIDER S; SCHUELL H; STRIEBEL  
W; ZAHLMANN G

Number of Countries: 002    Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 10128532	A1	20030102	DE 1028532	A	20010613	200331 B
US 20030095712	A1	20030522	US 2002172312	A	20020613	200336

Priority Applications (No Type Date): DE 1028532 A 20010613

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 10128532	A1		9	H04N-001/41	
US 20030095712	A1			G06K-009/36	

Abstract (Basic): DE 10128532 A1

NOVELTY - A method for ascertaining a **data compression** method, from a lot of **data compression** procedures, for **data compressing** an **image data** -set assigned to an image. At a first location, at which the **data** is **compressed**, the **quality** that the image being communicated should have at a second location is ascertained, and based on the required **quality**, that **data compression** procedure is selected, from the several **data compression** procedures, which gives the highest possible compression factor and which allows the necessary **quality** of the image to be transmitted.

USE - Medical-technical equipment e.g. diagnostic X-ray equipment.

ADVANTAGE - Includes the prerequisites required for **data compression** of an **image data** set assigned to the image

DESCRIPTION OF DRAWING(S) - A flow diagram of the method encompassing four main steps (1b-4b) is shown .(Contains non-English language text).

pp; 9 DwgNo 4/4

Title Terms: DATA; COMPRESS; DETERMINE; PROCEDURE; MEDICAL; EQUIPMENT;

SELECT; DATA; COMPRESS; PROCEDURE; HIGH; COMPRESS; FACTOR

Derwent Class: S03; S05; U21; W01

International Patent Class (Main): G06K-009/36; H04N-001/41

International Patent Class (Additional): G06K-009/00

File Segment: EPI

12/5/5 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015173864 \*\*Image available\*\*

WPI Acc No: 2003-234392/200323

XRPX Acc No: N03-186624

**Image reading method for scanner, involves producing image file having size smaller than set maximum file size by compressing image data read in resolution determined based on maximum file size**

Patent Assignee: CANON KK (CANO )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2003046734	A	20030214	JP 2001235056	A	20010802	200323 B

Priority Applications (No Type Date): JP 2001235056 A 20010802

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2003046734	A		8	H04N-001/17	

Abstract (Basic): JP 2003046734 A

NOVELTY - **Resolution** of the reading image is determined based on the size of the image to be read and the set maximum file size. Image file having a size below the set maximum file size is produced by can pressing the image data read in the determined **resolution**.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) program; and
- (2) recording medium.

USE - Image reading method for scanner connected to host computer.

ADVANTAGE - Enables to produce the image file easily and simplifies operation.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart explaining the scanning of the mail screen. (Drawing includes non-English language text).

pp; 8 DwgNo 7/8

Title Terms: IMAGE; READ; METHOD; SCAN; PRODUCE; IMAGE; FILE; SIZE; SMALLER

; SET; MAXIMUM; FILE; SIZE; COMPRESS; IMAGE; DATA; READ; **RESOLUTION** ;

DETERMINE; BASED; MAXIMUM; FILE; SIZE

Derwent Class: T01; W02

International Patent Class (Main): H04N-001/17

International Patent Class (Additional): G06T-001/60; H04N-001/387;

H04N-001/413  
File Segment: EPI

12/5/6 (Item 3 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

014698104 \*\*Image available\*\*  
WPI Acc No: 2002-518808/200255  
XRPX Acc No: N02-410691

**Media signal recording method for home electronic entertainment applications, involves recording media signal compressed at maximum compression rate without unacceptable loss of quality of media signal**  
Patent Assignee: KORFIN R (KORF-I); SANDLER M (SAND-I); VENGO INC (VENG-N)  
Inventor: KORFIN R; SANDLER M

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020064118	A1	20020530	US 2000725369	A	20001129	200255 B
US 6606287	B2	20030812	US 2000725369	A	20001129	200355

Priority Applications (No Type Date): US 2000725369 A 20001129

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20020064118	A1	16	G11B-007/45	
US 6606287	B2		G11B-005/09	

Abstract (Basic): US 20020064118 A1

NOVELTY - Data items associated with a media signal are generated, from which a **maximum compression rate is determined**. The media signal is **compressed** at a **maximum compression rate** into a **compressed media** signal and is stored. Recording of the **compressed media** signal does not result in an unacceptable loss of **quality** of the media signal.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Recorder; and
- (2) Computer program product storing instructions for performing media signal recording.

USE - For recording media signal on VCR tape, DVD, CD, cassette tape and computer disk for home electronic entertainment applications.

ADVANTAGE - The **media** signal is **compressed** at either lower or higher **compression rate**. The **compressed media** signal is recorded, without unacceptable loss of **quality** of media signal.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the general purpose computer.

pp; 16 DwgNo 10/10

Title Terms: MEDIUM; SIGNAL; RECORD; METHOD; HOME; ELECTRONIC; ENTERTAINMENT; APPLY; RECORD; MEDIUM; SIGNAL; COMPRESS; MAXIMUM; COMPRESS ; RATE; UNACCEPTABLE; LOSS; **QUALITY** ; MEDIUM; SIGNAL

Derwent Class: T01; U21; W04

International Patent Class (Main): G11B-005/09; G11B-007/45

File Segment: EPI

12/5/7 (Item 4 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

014067031 \*\*Image available\*\*  
WPI Acc No: 2001-551244/200162  
XRPX Acc No: N01-409592

**Video encoder with real time adjustment of quantization steps by computing the maximum and minimum step size depending on the numbers of generated and target bits**

Patent Assignee: SHARP KK (SHAF ); SHARP LAB AMERICA INC (SHAF )  
Inventor: RIBAS J; RIBAS-CORBERA J

Number of Countries: 027 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1096803	A2	20010502	EP 2000123169	A	20001025	200162 B
JP 2001169284	A	20010622	JP 2000321777	A	20001020	200162
US 6535251	B1	20030318	US 99427889	A	19991026	200322

Priority Applications (No Type Date): US 99427889 A 19991026

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 1096803	A2	E	24	H04N-007/50	
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT

LI LT LU LV MC MK NL PT RO SE SI

JP 2001169284	A		21	H04N-007/24	
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US 6535251	B1			H04N-007/18	
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Abstract (Basic): EP 1096803 A2

NOVELTY - A video signal is received by a video encoder (52) together with data from an encoding rate control unit (56) regarding quantization step size and the encoder encodes the video signal according to the step size, to produce a digital signal, which is input to an encoder buffer (54) at its production rate. Data are fed from the buffer through a channel (46) at constant or variable rate to a decoder buffer (62) and then to a video decoder (64) for final decoding.

DETAILED DESCRIPTION - AN INDEPENDENT CLAIM is included for a method of setting a quantization step.

USE - Coding a digital video signal at variable bit rate and quantization step.

ADVANTAGE - Achieving **compression** and high **image quality**.

DESCRIPTION OF DRAWING(S) - The drawing is a block diagram of the system

Video encoder (52)

Encoding rate control unit (56)

Encoder buffer (54)

Decoder buffer (62)

Video decoder (64)

pp; 24 DwgNo 5/16

Title Terms: VIDEO; ENCODE; REAL; TIME; ADJUST; QUANTUM; STEP; COMPUTATION;

MAXIMUM; MINIMUM; STEP; SIZE; DEPEND; NUMBER; GENERATE; TARGET; BIT

Derwent Class: W02; W04

International Patent Class (Main): H04N-007/18; H04N-007/24; H04N-007/50

International Patent Class (Additional): H03M-007/30

File Segment: EPI

12/5/8 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

013889273 \*\*Image available\*\*

WPI Acc No: 2001-373486/200139

XRPX Acc No: N01-273166

Quality **parameter selecting method for image compression system, involves estimating maximum and minimum quality parameters, and setting target compressed file size using rate distortion curve**

Patent Assignee: EASTMAN KODAK CO (EAST )

Inventor: HONSINGER C W; JONES P W; RABBANI M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6212302	B1	20010403	US 98222190	A	19981229	200139 B

Priority Applications (No Type Date): US 98222190 A 19981229

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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US 6212302	B1		13	G06K-009/36	
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Abstract (Basic): US 6212302 B1

NOVELTY - The digital **image** (10) is **compressed** relevant to quantizer parameters for obtaining files. A rate-distortion curve is formed from quantizer parameters and corresponding target file **size**. The maximum and **minimum quality** parameters are **estimated**. The specific parameters is selected based on the rate distortion curve and file size.

USE - For **image compression** system used with printer, digital satellite transmission, Internet.

ADVANTAGE - Enables user to specify the minimum and maximum **quality** parameters relevant to file size and visual distortion due to flexible rate control strategy.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of **quality** parameter selecting method.

Digital image (10)

pp; 13 DwgNo 1/6

Title Terms: **QUALITY** ; PARAMETER; SELECT; METHOD; IMAGE; COMPRESS; SYSTEM; ESTIMATE; MAXIMUM; MINIMUM; **QUALITY** ; PARAMETER; SET; TARGET; COMPRESS; FILE; SIZE; RATE; DISTORT; CURVE

Derwent Class: T01; T04

International Patent Class (Main): G06K-009/36

File Segment: EPI

12/5/9 (Item 6 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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013772088 \*\*Image available\*\*

WPI Acc No: 2001-256299/200126

Related WPI Acc No: 2002-236112; 2002-665945; 2004-327523

XRPX Acc No: N01-182665

Content **independent lossless data compression method, involves encoding input with lossless encoders, determining compression ratio, and selecting data block for output**

Patent Assignee: REALTIME DATA LLC (REAL-N)

Inventor: FALLON J J

Number of Countries: 088 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6195024	B1	20010227	US 98210491	A	19981211	200126 B
WO 200239591	A1	20020516	WO 2000US42018	A	20001109	200239 N
AU 200130794	A	20020521	WO 2000US42018	A	20001109	200260 N
			AU 200130794	A	20001109	

Priority Applications (No Type Date): US 98210491 A 19981211; WO

2000US42018 A 20001109; AU 200130794 A 20001109

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 6195024 B1 29 H03M-007/34

WO 200239591 A1 E H03M-007/30

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200130794 A H03M-007/30 Based on patent WO 200239591

Abstract (Basic): US 6195024 B1

NOVELTY - The method involves encoding the input with lossless encoders, **determining the data compression ratio**, and selecting **data block with highest compression ratio for output**.

DETAILED DESCRIPTION - An input block of data is received from a stream of data, in which the stream comprises several data blocks. The size of the input data block is counted, and the block is encoded using lossless encoders, to provide several encoded data blocks. The size of each of the encoded data blocks is counted. The lossless **data compression ratio**, obtained for each encoder, is determined by taking

the ratio of the size of the encoded data block from the encoders to the size of the input data block. The size of the compression ratio is compared with a user specified **compression** ratio. A **data** block is selected for output, and a null type **data compression** descriptor is appended to the input data block, if all of the compression ratios fall below the user specified value. The encoded data block with the highest compression ratio is selected for output, and a corresponding **data** type **compression** descriptor is appended to the selected encoded data block, if at least one of the compression ratios exceed the user specified threshold. INDEPENDENT CLAIMS are included for **content** independent lossless **data compression** system.

USE - For data processing, especially for continuous information such as speech, music, audio, images, and video.

ADVANTAGE - The method achieves maximum compression in accordance with the real time or pseudo real time data rate constraint. The output bit rate is not fixed, and the amount of permissible data **quality** degradation is not adaptable, but is user specified.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic block diagram illustrating a compression system.

Data block counter (10)

Input data buffer (20)

Encoder module (30)

Buffer/counter module (40)

Compression ratio determination comparison (50)

Compression type descriptor (60)

pp; 29 DwgNo 2/12

Title Terms: CONTENT; INDEPENDENT; LOSS; DATA; COMPRESS; METHOD; ENCODE; INPUT; LOSS; ENCODE; DETERMINE; COMPRESS; RATIO; SELECT; DATA; BLOCK; OUTPUT

Derwent Class: U21

International Patent Class (Main): H03M-007/30; H03M-007/34

International Patent Class (Additional): H03M-007/00

File Segment: EPI

12/5/10 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012081418 \*\*Image available\*\*

WPI Acc No: 1998-498329/199843

XRPX Acc No: N98-389348

Image data compression and decompression method - having for each elementary subset which size is larger than minimum dimension with division suitability estimation step and when appropriate, step of supplementary partitioning of subset

Patent Assignee: CANON KK (CANO )

Inventor: AMONOU I; CHARRIER M; DIERIECK C

Number of Countries: 026 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 868073	A1	19980930	EP 98400672	A	19980323	199843 B
FR 2761552	A1	19981002	FR 973863	A	19970328	199845
FR 2761553	A1	19981002	FR 973864	A	19970328	199845
FR 2761554	A1	19981002	FR 973865	A	19970328	199845
JP 11055124	A	19990226	JP 98100259	A	19980327	199919
US 6266451	B1	20010724	US 9846602	A	19980324	200146

Priority Applications (No Type Date): FR 973865 A 19970328; FR 973863 A 19970328; FR 973864 A 19970328

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 868073 A1 E 77 H04N-001/41

Designated States (Regional): AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

FR 2761552 A1 H03M-007/50

FR 2761553 A1 H03M-007/50

FR 2761554 A1 H03M-007/50

JP 11055124 A 192 H03M-007/30  
US 6266451 B1 G06K-009/36

Abstract (Basic): EP 868073 A

The method involves, for each elementary subset which does not have the minimum dimension, an iteration of a sequence of steps having a division suitability estimation step during which a suitability for division of the elementary subset is estimated. The suitability estimate does not meet predetermined so-called '**quality**' criteria, a step of 'supplementary partitioning' of the subset into so-called 'intermediate' elementary subsets (Ki). A 'construction' step in which, for each elementary subset resulting from the last partitioning step, n working subsets (Li) are considered, n being non-zero, and an elementary mapping of the n working subsets in the elementary subset under consideration is constructed by determining the parameters (ai, b) of the elementary mapping so as to make contractive a so-called 'first type' global mapping. For the set of data, the global mapping belongs to the group of mappings composed of multidimensional mappings and non-linear mappings.

The restrictions of the global mapping to the elementary subsets being composed of the elementary mappings. The fixed point of the global mapping constitutes an approximation of all or part of this set, allow the use of a method of successive approximations (407-410) converging towards the fixed point of the global contractive mapping. The set of parameters determined, and, when a supplementary partitioning step has taken place, so-called 'partitioning' information, representing each the supplementary partitioning, jointly constitutes a primary representation of the set of data.

ADVANTAGE - Improved performances, **quality** of data or restored **image**. Results in significant **compression** of **data** to be transmitted or stored.

Dwg.3/21

Title Terms: IMAGE; DATA; COMPRESS; DECOMPRESS; METHOD; ELEMENTARY; SUBSET; SIZE; LARGER; MINIMUM; DIMENSION; DIVIDE; SUIT; ESTIMATE; STEP; APPROPRIATE; STEP; SUPPLEMENTARY; SUBSET  
Derwent Class: W02; W04  
International Patent Class (Main): G06K-009/36; H03M-007/30; H03M-007/50; H04N-001/41  
International Patent Class (Additional): G06T-001/00; G06T-009/00; H04N-007/24; H04N-007/26  
File Segment: EPI

12/5/11 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

011790856 \*\*Image available\*\*

WPI Acc No: 1998-207766/199818

XRPX Acc No: N98-165000

**Digital image compression method to obtain image data set for subsequent reconstruction - performing modified zero tree coding on range of absolute image values from largest, to determined smaller absolute value based upon file size or quality**

Patent Assignee: WDE INC (WDEW-N); ZADOR A M (ZADO-I)

Inventor: ZADOR A M

Number of Countries: 077 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9811728	A1	19980319	WO 97CA452	A	19970625	199818 B
AU 9732496	A	19980402	AU 9732496	A	19970625	199833
EP 908055	A1	19990414	EP 97928069	A	19970625	199919
			WO 97CA452	A	19970625	
US 6125201	A	20000926	WO 97CA452	A	19970625	200051
			US 98147403	A	19981218	
JP 2000513895	W	20001017	WO 97CA452	A	19970625	200056
			JP 98508277	A	19970625	

Priority Applications (No Type Date): US 96668753 A 19960624; US 98147403 A



19981218

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9811728 A1 E 60 H04N-007/26

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU  
CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV  
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US  
UZ VN

Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GR IE IT  
KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9732496 A H04N-007/26 Based on patent WO 9811728

EP 908055 A1 E H04N-007/26 Based on patent WO 9811728

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE

US 6125201 A G06K-009/00 Based on patent WO 9811728

JP 2000513895 W 85 H04N-001/41 Based on patent WO 9811728

Abstract (Basic): WO 9811728 A

The method involves determining if a digital image is a colour in RGB colour space and converting any determined RGB colour images to a less redundant colour space. A wavelet decomposition is performed upon each of the image colour planes in the less redundant colour space to obtain a transform of DC and non-DC terms, with subsequent lossless coding of the DC terms. The transform is converted to sign and magnitude format. A division point is selected comprising one of an adjacent pair of bit-planes and a pair of adjacent amplitudes, separating the non-DC terms into first and second ranges based upon absolute magnitudes. The first range comprises transform values greater in magnitude than those values in the transform second range.

The method uses a scalar quantiser to encode the first range values. A vector quantiser encodes the second range values. The resulting data set is coded with a lossless entropy encoder to obtain a **compressed image data set**.

ADVANTAGE - Allows error detection and correction codes to be applied in lossless coding of DC terms, modified zero-tree or vector quantisers, as desired, based upon importance of coded information to final reconstructed **quality** and compression requirements.

Dwg.1/10

Title Terms: DIGITAL; IMAGE; COMPRESS; METHOD; OBTAIN; IMAGE; DATA; SET;  
SUBSEQUENT; RECONSTRUCT; PERFORMANCE; MODIFIED; ZERO; TREE; CODE; RANGE;  
ABSOLUTE; IMAGE; VALUE; DETERMINE; SMALLER; ABSOLUTE; VALUE; BASED; FILE;  
SIZE; **QUALITY**

Derwent Class: T01; W02; W04

International Patent Class (Main): G06K-009/00; H04N-001/41; H04N-007/26

International Patent Class (Additional): H04N-001/46; H04N-001/60;

H04N-007/28; H04N-011/04

File Segment: EPI

12/5/12 (Item 9 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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010441036 \*\*Image available\*\*

WPI Acc No: 1995-342355/199544

XRPX Acc No: N95-255753

**Data compression method for video system, television broadcasting -  
by using compression rate determination part in determining greatest  
compression rate based on compression rate currently stored which will  
eventually serve as predetermined compression rate**

Patent Assignee: DENON CO LTD (NPCO )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 7236139	A	19950905	JP 9446328	A	19940221	199544 B

Priority Applications (No Type Date): JP 9446328 A 19940221

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
JP 7236139 A 10 H04N-007/30

Abstract (Basic): JP 7236139 A

The method involves **compression** (2) of **data** using a predetermined **compression** rate. Meanwhile, a compression rate prediction part (5) predicts the compression rate of the present **data** according to the **compression** result of the **data** which was **compressed** before it.

A storage part (6) holds each compression rate which goes back to the first **data** that were **compressed** up to those which was last **compressed**. The **greatest compression** rate is **determined** by a compression rate **determination** part (16) based on the currently stored **data compression** rates. Once the greatest compression

rate is determined, it will be given to the compression part to serve as the predetermined compression rate.

ADVANTAGE - Reduces overflow that produces flush and stroboscope when scene and image changes sharply, provides reproduction image without sense of incongruity, and prevents deterioration of **data quality** due to **compression** rate determination part and compression part.

Dwg.1/9

Title Terms: DATA; COMPRESS; METHOD; VIDEO; SYSTEM; TELEVISION; BROADCAST;  
COMPRESS; RATE; DETERMINE; PART; DETERMINE; GREATER; COMPRESS; RATE;  
BASED; COMPRESS; RATE; CURRENT; STORAGE; SERVE; PREDETERMINED; COMPRESS;  
RATE

Derwent Class: U21; W02

International Patent Class (Main): H04N-007/30

International Patent Class (Additional): H03M-007/30; H04N-001/41;  
H04N-005/92

File Segment: EPI

12/5/13 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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010050941 \*\*Image available\*\*

WPI Acc No: 1994-318652/199440

XREX Acc No: N94-250311

**Fuzzy controlled coding method for block image data - determining quantisation step size from image complexity, buffer fullness, motion vector and picture brightness.**

Patent Assignee: SAMSUNG ELECTRONICS CO LTD (SMSU )

Inventor: JEONG J; JUNG J

Number of Countries: 006 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 620686	A2	19941019	EP 94302674	A	19940414	199440 B
JP 7050830	A	19950221	JP 9477347	A	19940415	199517
EP 620686	A3	19950308	EP 94302674	A	19940414	199542
US 5475433	A	19951212	US 94228553	A	19940415	199604
KR 9711859	B1	19970718	KR 936313	A	19930415	199947
EP 620686	B1	20000607	EP 94302674	A	19940414	200032
DE 69424825	E	20000713	DE 624825	A	19940414	200040
			EP 94302674	A	19940414	
JP 3121197	B2	20001225	JP 9477347	A	19940415	200102

Priority Applications (No Type Date): KR 936313 A 19930415

Cited Patents: No-SR.Pub; 5.Jnl.Ref; EP 514865; JP 5260455; US 5038209

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
EP 620686 A2 E 15 H04N-007/13

Designated States (Regional): DE FR GB

JP 7050830 A 14 H04N-007/24

EP 620686 A3 H04N-007/13

US 5475433 A 12 H04N-007/32

KR 9711859 B1 G06T-001/00

EP 620686 B1 E H04N-007/30  
Designated States (Regional): DE FR GB  
DE 69424825 E H04N-007/30 Based on patent EP 620686  
JP 3121197 B2 13 H04N-007/24 Previous Publ. patent JP 7050830

Abstract (Basic): EP 620686 A

The method involves establishing fuzzy control regulations providing a quantisation step size from input variables comprising image complexity, buffer fullness, motion vector and picture brightness. Linguistic truth values related to the respective input variables and corresp. membership functions are determined. A membership grade is established from each membership function.

The calculated membership grade, the associated linguistic truth value and the fuzzy control regulations are used to generate a second membership function. This generation is in accordance with a predetermined reasoning operation. The quantisation step size is determined according to the second membership function, using a predetermined de-fuzzification operation.

ADVANTAGE - Enables high image **quality** to be achieved at high **data compression** rates.

Dwg.3/5

Title Terms: FUZZ; CONTROL; CODE; METHOD; BLOCK; IMAGE; DATA; DETERMINE; QUANTUM; STEP; SIZE; IMAGE; COMPLEX; BUFFER; FULL; MOTION; VECTOR; PICTURE; BRIGHT

Derwent Class: T01; W02; W04

International Patent Class (Main): G06T-001/00; H04N-007/13; H04N-007/24; H04N-007/30; H04N-007/32

International Patent Class (Additional): G06F-009/44; G06T-009/00; H03M-007/38; H04N-007/50

File Segment: EPI

12/5/14 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009503824 \*\*Image available\*\*

WPI Acc No: 1993-197360/199324

XRPX Acc No: N93-151767

**Document image compression method establishing required memory space**  
**- selects quantising matrix in dependence of memory space needed to store**  
**image data after compression by discrete transform technique.**

Patent Assignee: UNISYS CORP (BURS )

Inventor: HIGGINS-LUTHMAN M J; KIDD R C; KLEIN R D; YEN R C; ZALINSKI C M;  
YEN R; HIGGINS-LUTHMANN M J

Number of Countries: 017 Number of Patents: 011

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9311629	A2	19930610	WO 92US9910	A	19921119	199324	B
EP 568681	A1	19931110	EP 92925284	A	19921119	199345	
			WO 92US9910	A	19921119		
US 5339368	A	19940816	US 91796703	A	19911121	199432	
JP 7502154	W	19950302	WO 92US9910	A	19921119	199517	
			JP 93510145	A	19921119		
EP 798919	A2	19971001	EP 92925284	A	19921119	199744	
			EP 97105726	A	19921119		
EP 568681	B1	19971022	EP 92925284	A	19921119	199747	
			WO 92US9910	A	19921119		
			EP 97105726	A	19921119		
DE 69222844	E	19971127	DE 622844	A	19921119	199802	
			EP 92925284	A	19921119		
			WO 92US9910	A	19921119		
EP 798919	A3	19971119	EP 92925284	A	19921119	199816	
			EP 97105726	A	19921119		
US 5751846	A	19980512	US 91796703	A	19911121	199826	
			US 94207284	A	19940307		
EP 798919	B1	20000216	EP 92925284	A	19921119	200014	
			EP 97105726	A	19921119		

DE 69230695 E 20000323 DE 630695 A 19921119 200022  
EP 97105726 A 19921119

Priority Applications (No Type Date): US 91796703 A 19911121; US 94207284 A 19940307

Cited Patents: No-SR.Pub; DE 4034535; EP 187911; EP 380081; US 4903145; US 4920426

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9311629 A2 E 49 H04N-001/46

Designated States (National): JP

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL SE

EP 798919 B1 E H04N-001/41 Div ex application EP 92925284  
Div ex patent EP 568681

Designated States (Regional): DE FR GB IT

DE 69230695 E H04N-001/41 Based on patent EP 798919

EP 568681 A1 E 2 H04N-001/46 Based on patent WO 9311629

Designated States (Regional): DE FR GB IT

US 5339368 A 16 G06K-009/36

JP 7502154 W 1 H04N-001/41 Based on patent WO 9311629

EP 798919 A2 E 20 H04N-001/41 Div ex application EP 92925284  
Div ex patent EP 568681

Designated States (Regional): DE FR GB IT

EP 568681 B1 E 30 H04N-001/46 Related to application EP 97105726

Related to patent EP 798919

Based on patent WO 9311629

Designated States (Regional): DE FR GB IT

DE 69222844 E H04N-001/46 Based on patent EP 568681

Based on patent WO 9311629

EP 798919 A3 H04N-001/46 Div ex application EP 92925284

Div ex patent EP 568681

US 5751846 A G06K-009/00 Div ex application US 91796703

Div ex patent US 5339368

Abstract (Basic): WO 9311629 A

The method uses a packet size estimator to establish the packet size of the memory space required to store the image data for a given document after compression by discrete transform technique. The data comprises pixels each representing one of a number of grey levels.

A selection processor selects, as a function of the estimate, one of a number of transform coefficient modifier matrices, e.g. a matrix of quantising values. The selected matrix of modifiers is transmitted to a transform compressor for use in altering, e.g. quantising, the number of transform coefficients.

ADVANTAGE - Modifies compression characteristics in real time.

Maximises image quality and background noise characteristics.

for

Dwg.2/9

Title Terms: DOCUMENT; IMAGE; COMPRESS; METHOD; ESTABLISH; REQUIRE; MEMORY; SPACE; SELECT; QUANTUM; MATRIX; DEPEND; MEMORY; SPACE; NEED; STORAGE; IMAGE; DATA; AFTER; COMPRESS; DISCRETE; TRANSFORM; TECHNIQUE

Derwent Class: T01; T05; W02

International Patent Class (Main): G06K-009/00; G06K-009/36; H04N-001/41; H04N-001/46

International Patent Class (Additional): H04N-001/407; H04N-007/30

File Segment: EPI

12/5/15 (Item 12 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009254997 \*\*Image available\*\*

WPI Acc No: 1992-382414/199246

XRPX Acc No: N92-291597

Estimating motion contents in digital video signals - using hierarchical processing with different block sized from coarser to finer with

# **prediction of motion vectors from surrounding blocks**

Patent Assignee: DV SWEDEN AB (DVSW-N)

Inventor: CHRISTENSSON B; WEISS P

Number of Countries: 017 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9219068	A1	19921029	WO 92SE219	A	19920403	199246	B
SE 9101113	A	19921013	SE 911113	A	19910412	199249	
SE 469866	B	19930927	SE 911113	A	19910412	199341	
EP 579692	A1	19940126	EP 92908559	A	19920403	199404	
			WO 92SE219	A	19920403		
JP 6506578	W	19940721	JP 92508095	A	19920403	199433	
			WO 92SE219	A	19920403		
US 5557341	A	19960917	WO 92SE219	A	19920403	199643	
			US 93133089	A	19931008		
EP 579692	B1	19961009	EP 92908559	A	19920403	199645	
			WO 92SE219	A	19920403		
DE 69214444	E	19961114	DE 614444	A	19920403	199651	
			EP 92908559	A	19920403		
			WO 92SE219	A	19920403		
JP 3299263	B2	20020708	JP 92508095	A	19920403	200247	
			WO 92SE219	A	19920403		

Priority Applications (No Type Date): SE 911113 A 19910412

Cited Patents: US 4691230; US 4796087; US 4800425; US 4924310

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9219068	A1	E	20	H04N-005/14	
				Designated States (National): CA JP US	
				Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU MC NL SE	
SE 9101113	A			H04N-007/13	
SE 469866	B			H04N-007/13	
EP 579692	A1	E	2	H04N-005/14	Based on patent WO 9219068
				Designated States (Regional): DE FR GB	
JP 6506578	W		1	H04N-007/13	Based on patent WO 9219068
US 5557341	A		11	H04N-005/14	Based on patent WO 9219068
EP 579692	B1	E	13	H04N-005/14	Based on patent WO 9219068
				Designated States (Regional): DE FR GB	
DE 69214444	E			H04N-005/14	Based on patent EP 579692
					Based on patent WO 9219068
JP 3299263	B2		8	H04N-007/32	Previous Publ. patent JP 6506578
					Based on patent WO 9219068

Abstract (Basic): WO 9219068 A

Each search step (S1, S2...) for each block of a picture involves the calculation of a predicted motion vector (PMV) based on motion vectors, obtained in the present search step and, possibly, from at least one preceding picture.

The PMV therefore corresponds to a predicted new displaced position for the associated block (RB) of the present picture (PN). The predetermined search area (SA) surround the displaced position and, with the pattern, is adapted to the present block size between two consecutive search steps.

USE/ADVANTAGE - Increases spatial **resolution**. Provides algorithm robustness. For conversion between different television signal standards, noise redn. of **video** signals, **data compression** for digital transmission of TV or HDTV signals and slow motion devices. Can be applied to multidimensional motion vector fields.

Dwg.1/6

Title Terms: ESTIMATE; MOTION; CONTENT; DIGITAL; VIDEO; SIGNAL; HIERARCHY; PROCESS; BLOCK; SIZE; COARSE; FINE; PREDICT; MOTION; VECTOR; SURROUND; BLOCK

Derwent Class: W02; W04

International Patent Class (Main): H04N-005/14; H04N-007/13; H04N-007/32

International Patent Class (Additional): G06F-015/70; H04N-007/01; H04N-007/24; H04N-009/64

File Segment: EPI

18/5/15 (Item 9 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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014422815 \*\*Image available\*\*  
WPI Acc No: 2002-243518/200230  
XRPX Acc No: N02-188426

Digital image compression in image encoder, involves ordering compressed bit-stream of minimum set of passes into layers, from lowest to highest expected visual quality levels, to produce compressed digital image

Patent Assignee: EASTMAN KODAK CO (EAST )  
Inventor: JONES P W; JOSHI R L  
Number of Countries: 028 Number of Patents: 003  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1158774	A2	20011128	EP 2001201909	A	20010521	200230 B
JP 2002064710	A	20020228	JP 2001157380	A	20010525	200231
US 6668090	B1	20031223	US 2000579689	A	20000526	200408

Priority Applications (No Type Date): US 2000579689 A 20000526

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1158774	A2	E	19	H04N-001/41	
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT					
LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2002064710	A		17	H04N-001/41	
US 6668090	B1			G06K-009/46	

Abstract (Basic): EP 1158774 A2

NOVELTY - A visual image **quality** table (210) specifying expected visual image **quality** levels and threshold viewing distances are provided. **Compressed** bit-stream and the **minimum** set of passes of bit-stream are **identified**, to achieve corresponding **quality** level. The bit-streams are ordered into layers, from lowest to highest expected visual **quality** levels, by a layer formation and ordering unit (212), to produce a **compressed** digital **image**.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) Computer program product;

(b) Image rate control method

USE - For encoding digital images using joint photographic experts group (JPEG2000) technique for printing and display applications.

ADVANTAGE - The subbands in each pass are quantized sufficiently using simple structure.

DESCRIPTION OF DRAWING(S) - The figure shows a flowchart of image encoder.

Visual image **quality** table (210)

Layer formation and ordering unit (212)

pp; 19 DwgNo 2/9

Title Terms: DIGITAL; IMAGE; COMPRESS; IMAGE; ENCODE; ORDER; COMPRESS; BIT; STREAM; MINIMUM; SET; PASS; LAYER; LOW; HIGH; VISUAL; **QUALITY**; LEVEL; PRODUCE; COMPRESS; DIGITAL; IMAGE

Derwent Class: T01; W02; W04

International Patent Class (Main): G06K-009/46; H04N-001/41

International Patent Class (Additional): G06K-009/54; H03M-007/30; H03M-007/40; H04N-007/30

File Segment: EPI

18/5/17 (Item 11 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012890388 \*\*Image available\*\*  
WPI Acc No: 2000-062222/200005  
Related WPI Acc No: 2000-038887  
XRPX Acc No: N00-048748

**Data compression method in video coder**

Patent Assignee: KONINK PHILIPS ELECTRONICS NV (PHIG ); PHILIPS AB (PHIG ); BAILLEUL N (BAIL-I)

Inventor: BAILLEUL N

Number of Countries: 022 Number of Patents: 007

**Patent Family:**

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9957884	A2	19991111	WO 99IB724	A	19990422	200005 B
EP 992155	A2	20000412	EP 99913523	A	19990422	200023
			WO 99IB724	A	19990422	
CN 1273748	A	20001115	CN 99801043	A	19990422	200115
KR 2001014321	A	20010226	KR 99712463	A	19991229	200156
JP 2002506605	W	20020226	JP 99555114	A	19990422	200219
			WO 99IB724	A	19990422	
US 20030043906	A1	20030306	US 99300698	A	19990427	200320
US 6731812	B2	20040504	US 99300698	A	19990427	200430

Priority Applications (No Type Date): EP 98401721 A 19980707; EP 98401053 A 19980430

**Patent Details:**

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9957884	A2	E	19	H04N-000/00	
Designated States (National): CN JP KR					
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
EP 992155	A2	E		H04N-001/00	Based on patent WO 9957884
Designated States (Regional): DE ES FR GB IT					
CN 1273748	A			H04N-007/50	
KR 2001014321	A			G06F-007/00	
JP 2002506605	W		24	H04N-007/32	Based on patent WO 9957884
US 20030043906	A1			H04N-007/12	
US 6731812	B2			G06K-009/36	

**Abstract (Basic): WO 9957884 A2**

NOVELTY - The amount of **compressed data** (Xprd) which will be obtained at a future instant of time (Tfut) is predicted on the basis of initial value (VALint) of compression parameter (CPAR). The initial value is adapted on the basis of difference (DELTAX) between the predicted amount of data and desired amount of data (Xdes), so as to obtain adapted value (VALadp) of compression parameter.

USE - In moving pictures experts group (MPEG) video coder.

ADVANTAGE - The method employing stages of predicting, adapting and applying defined by compression parameter provides a better **quality** sequence of images. The **quality** of **data compression** in terms of **minimal loss of information** is influenced by **compression** parameter and **determines** to which extent the **data** is **compressed**, thus improving the **data** handling capacity of the receiving entity and avoiding unnecessary loss of data.

DESCRIPTION OF DRAWING(S) - The figure shows conceptual diagram illustrating the **data compression** method.

pp; 19 DwgNo 1/6

Title Terms: DATA; COMPRESS; METHOD; VIDEO; CODE

Derwent Class: T01; W02; W04

International Patent Class (Main): G06F-007/00; G06K-009/36; H04N-000/00;

H04N-001/00; H04N-007/12; H04N-007/32; H04N-007/50

File Segment: EPI

18/5/22 (Item 16 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009880682 \*\*Image available\*\*

WPI Acc No: 1994-160596/199420

Related WPI Acc No: 1997-052589; 2000-085233

XRPX Acc No: N94-126344

Page text, graphics and image data compression for CRT, LCD or esp. raster printer - selecting compression algorithm according to type of data, compressing and storing

Patent Assignee: ADOBE SYSTEMS INC (ADOB-N)  
 Inventor: GENTILE R S  
 Number of Countries: 009 Number of Patents: 012  
 Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 597571	A2	19940518	EP 93306254	A	19930806	199420 B
CA 2104824	A	19940511	CA 2104824	A	19930825	199430
JP 6284297	A	19941007	JP 93303312	A	19931110	199445
EP 597571	A3	19950125	EP 93306254	A	19930806	199539
US 5504842	A	19960402	US 92974204	A	19921110	199619
			US 95467792	A	19950606	
US 5506944	A	19960409	US 92974204	A	19921110	199620
			US 95486133	A	19950606	
US 5539865	A	19960723	US 92974204	A	19921110	199635
US 5544290	A	19960806	US 92974204	A	19921110	199637
			US 95470737	A	19950606	
US 5949968	A	19990907	US 92974204	A	19921110	199943
			US 96670335	A	19960625	
EP 597571	B1	20020502	EP 93306254	A	19930806	200230
DE 69331871	E	20020606	DE 631871	A	19930806	200245
			EP 93306254	A	19930806	
JP 3454552	B2	20031006	JP 93303312	A	19931110	200366

Priority Applications (No Type Date): US 92974204 A 19921110; US 95467792 A 19950606; US 95486133 A 19950606; US 95470737 A 19950606; US 96670335 A 19960625

Cited Patents: No-SR.Pub; 2.Jnl.Ref; EP 320014; EP 475601

#### Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 597571	A2	E	26	G06F-015/72	
Designated States (Regional): DE FR GB IT NL SE					
CA 2104824	A			G06F-015/66	
JP 6284297	A		18	H04N-001/413	
EP 597571	A3			G06F-015/72	
US 5504842	A		18	G06K-015/00	Div ex application US 92974204
US 5506944	A		17	G06K-015/00	Div ex application US 92974204
US 5539865	A		17	G06K-015/00	
US 5544290	A		17	G06K-015/00	Div ex application US 92974204
US 5949968	A			G06K-015/00	Cont of application US 92974204
					Cont of patent US 5539865
EP 597571	B1	E		G06T-009/00	
Designated States (Regional): DE FR GB IT NL SE					
DE 69331871	E			G06T-009/00	Based on patent EP 597571
JP 3454552	B2		19	H04N-001/413	Previous Publ. patent JP 6284297

#### Abstract (Basic): EP 597571 A

A two-dimensional page representation to be printed has a combination of text, graphic and image representation types. A buffer memory stores data representing the page. A program memory stores compression algorithms.

A processor is coupled to the data and program memories for identifying regions contained in the page representation, determining the type and extent of each type of representation, rasterising and **compressing** the **data**, storing sequentially the **compressed data** for each region, reading and decompressing the data when required for printing.

ADVANTAGE - Reduced buffer memory requirement in image printer, especially those with high **resolution** and colour.



32/5/17 (Item 7 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013445971 \*\*Image available\*\*  
WPI Acc No: 2000-617914/200059  
XRPX Acc No: N00-457832

**Statistical multiplexing apparatus for video broadcast systems, has video analyzer to generate compression signal based on complexity of input video signal**

Patent Assignee: HUGHES ELECTRONICS CORP (HUGA )

Inventor: YANG C

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6091455	A	20000718	US 97792631	A	19970131	200059 B

Priority Applications (No Type Date): US 97792631 A 19970131

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6091455	A	13	H04N-007/24	

Abstract (Basic): US 6091455 A

NOVELTY - The video signals corresponding to **movie** is analyzed in **video analyzer (62)**. The **complexity** detector in **video analyzer** generates **complex** signal based on **complexity** of input **video** signal. **Weighting** factor based on **complex** signal is **determined** and a compression signal is generated based on **weighting** factor.

DETAILED DESCRIPTION - The video signals corresponding to movie is analyzed in video analyzer (62) and generates compression signal. An encoder (48) generates encoded video signal at variable rate determined by **compression** signal. The **video** generator (12) permanently records encoded video signal so that video signal can be repeatedly broadcast on a day or a month for a predetermined time. The video signals have complexity varying with time and video signal is segmented into several video frames. In absence of scene changes in video signal, every Nth video frame is designated as I frame.

USE - For video broadcast systems such as cable television system and satellite based broadcast system for transmitting video signals or channels, central locations to several remote viewing locations.

ADVANTAGE - The video signals are permanently recorded in video generator so that they can be repeatedly broadcast for predetermined time in a day or month. When scene change is detected, the video frame corresponding to scene change is automatically designated as I frame so that frame will be represented by relatively large amount of data. The video channel is weighed based on its contents, therefore video channel having action movie is weighted heavier than other channels so that action movie could be encoded with more video data.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of statistical multiplexer for recording video signal connected to several program sources and video generator.

Video generator (12)

Encoder (48)

Video analyzer (62)

pp; 13 DwgNo 4/8

Title Terms: STATISTICAL; MULTIPLEX; APPARATUS; VIDEO; BROADCAST; SYSTEM; VIDEO; GENERATE; COMPRESS; SIGNAL; BASED; COMPLEX; INPUT; VIDEO; SIGNAL

Derwent Class: T01; W01; W02; W04

International Patent Class (Main): H04N-007/24

International Patent Class (Additional): H04N-007/26

File Segment: EPI

32/5/18 (Item 8 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013429834 \*\*Image available\*\*

WPI Acc No: 2000-601777/200057  
Related WPI Acc No: 2000-601775  
XRPX Acc No: N00-445320

**Video sequence encoding method for video phone, involves selecting quantization level satisfying frame target bit rate based on encoding complexity measure to encode current frame**

Patent Assignee: SARNOFF CORP (SARN-N); KRISHNAMURTHY R (KRIS-I);  
SETHURAMAN S (SETH-I)

Inventor: KRISHNAMURTHY R; SETHURAMAN S

Number of Countries: 025 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200046999	A1	20000810	WO 2000US3092	A	20000203	200057 B
US 20020034245	A1	20020321	US 99118359	P	19990203	200224
			US 99376733	A	19990817	
TW 463505	A	20011111	TW 2000100056	A	20000104	200248
US 6539124	B2	20030325	US 99118359	P	19990203	200325
			US 99376733	A	19990817	

Priority Applications (No Type Date): US 99376733 A 19990817; US 99118359 P 19990203

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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WO 200046999	A1	E 17	H04N-007/50	
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Designated States (National): BR CA CN JP KR

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU

MC NL PT SE

US 20020034245	A1		H04B-001/66	Provisional application US 99118359
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TW 463505	A		H04N-007/50	
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US 6539124	B2		G06K-009/36	Provisional application US 99118359
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Abstract (Basic): WO 200046999 A1

NOVELTY - Video sequence encoding method involves segmenting current frame into different regions. An encoding complexity measure is generated based on first order temporal prediction model for each region of previously encoded frame, using which quantization level satisfying frame target bit rate is selected to encode the current frame.

USE - Used in video phone or video conferencing over plain old telephone service or integrated service digital network lines.

ADVANTAGE - Target frame level bit can be accurately met with lesser quantizer changes by segmenting current frame into different regions and generating encoding complexity for each region for selecting quantization level.

DESCRIPTION OF DRAWING(S) - The figure shows the flow diagram of processing involved in applying temporal prediction model during video compression processing.

pp; 17 DwgNo 2/2

Title Terms: VIDEO; SEQUENCE; ENCODE; METHOD; VIDEO; TELEPHONE; SELECT; QUANTUM; LEVEL; SATISFY; FRAME; TARGET; BIT; RATE; BASED; ENCODE; COMPLEX; MEASURE; ENCODE; CURRENT; FRAME

Derwent Class: T01; W01; W02; W04

International Patent Class (Main): G06K-009/36; H04B-001/66; H04N-007/50

International Patent Class (Additional): H04N-007/26

File Segment: EPI

32/5/19 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013154445

WPI Acc No: 2000-326317/200028

XRPX Acc No: N00-245456

**Adaptive complexity quantization for moving picture expert group-2 video compression to improve picture quality by modulating the nominal quantizer space for macro-blocks**

Patent Assignee: HU S C (HUSC-I); TEKTRONIX INC (TEKT )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
RD 430016	A	20000210	RD 2000430016	A	20000120	200028 B

Priority Applications (No Type Date): RD 00430016 A 20000120

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
RD 430016	A		1	H04N-000/00	

Abstract (Basic): RD 430016 A

NOVELTY - The subjective picture quality is improved by modulating the nominal quantizer scale for a macro-block according to the local block variance versus the average **picture** block variance. A new variance is introduced with a range of the **complexity weighting** function, **calculated** from the block and average block variances according to the moving **picture** expert group-2 test model. The range is used for adapting the dynamic range of the modulation strength according to the scene complexity.

USE - Improving subjective picture quality by modulating the nominal quantization scale.

ADVANTAGE - Improved adaptation by introducing range variable into the mquant(j) equation.

pp; 1 DwgNo 0/0

Title Terms: ADAPT; COMPLEX; MOVE; PICTURE; EXPERT; GROUP; VIDEO; COMPRESS; IMPROVE; PICTURE; QUALITY; MODULATE; NOMINAL; SPACE; MACRO; BLOCK

Derwent Class: W02; W04

International Patent Class (Main): H04N-000/00

File Segment: EPI

32/5/20 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013040994 \*\*Image available\*\*

WPI Acc No: 2000-212847/200019

XRPX Acc No: N00-159643

Image generation system for computer, has encoder which preforms data encoding based on estimated and actual pixel density information

Patent Assignee: CANON KK (CANO )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 11341290	A	19991210	JP 98147955	A	19980528	200019 B

Priority Applications (No Type Date): JP 98147955 A 19980528

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 11341290	A		10	H04N-001/41	

Abstract (Basic): JP 11341290 A

NOVELTY - An estimation unit estimates the pixel density, based on the stored density information about pixel group scanned last time, and pixel at selected position along main scanning direction. An encoder encodes the data, based on the estimated and actual density information. DETAILED DESCRIPTION - A selector chooses bit positions or position of bit row for encoding, based on the confirmation result on patterning mode of **data compression** objective area. According to the selected position, the density information about objective pixel with high position of vicinity relationship, are stored in a memory. An INDEPENDENT CLAIM is also included for image generation procedure.

USE - For generating images for computer, laser printer.

ADVANTAGE - Enhances bit **rate** of **data** subjected to predictive coding according to minimum **density information**, reliably. Since patterning of **data compression** objective area can be **determined**, high compression **rate** is obtained. DESCRIPTION OF DRAWING(S) - The

figure shows main hardware components of image generation system.

Dwg.1/6

Title Terms: IMAGE; GENERATE; SYSTEM; COMPUTER; ENCODE; PREFORM; DATA;  
ENCODE; BASED; ESTIMATE; ACTUAL; PIXEL; DENSITY; INFORMATION  
Derwent Class: P75; T01; U21; W02  
International Patent Class (Main): H04N-001/41  
International Patent Class (Additional): B41L-005/00  
File Segment: EPI; EngPI

32/5/21 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012899160 \*\*Image available\*\*

WPI Acc No: 2000-070995/200006

XRPX Acc No: N00-055414

Bit rate controller for digital image or video data compression  
encoder

Patent Assignee: TEKTRONIX INC (TEKT )

Inventor: EIFRIG R O; NAVEEN T; TABATABAI A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5995151	A	19991130	US 95566100	A	19951204	200006 B
			US 97932681	A	19970918	

Priority Applications (No Type Date): US 97932681 A 19970918; US 95566100 A  
19951204

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5995151	A	13	H04N-007/12	CIP of application US 95566100 CIP of patent US 5686964

Abstract (Basic): US 5995151 A

NOVELTY - Quality factor for the **image** block is **computed** by **computing** circuits based on the **complexity** factor and the target bit **rate** for the **image** block. The number of bits occupying the virtual buffer is controlled by a controller based on quality factor of the image so that a target value is attained for specific image sequence.

DETAILED DESCRIPTION - The **complexity** factor, quality factor and actual fit **rate** of an **image** block which are coded beforehand is obtained and a **complexity** factor for **image** block is generated by an **estimator** (20). An INDEPENDENT CLAIM is also included for moving **image data compressing** method.

USE - For digital **image** and **video data compression** encoder.

ADVANTAGE - Quality which is achievable for digital **image** when **compressed** to given number of bits is estimated. Number of bits required to represent digital image at particular quality in compressed form is estimated.

DESCRIPTION OF DRAWING(S) - The figure represents block diagram of bit rate controller.

Estimator (20)

pp; 13 DwgNo 4/12

File 348:EUROPEAN PATENTS 1978-2004/Aug W03  
(c) 2004 European Patent Office  
File 349:PCT FULLTEXT 1979-2002/UB=20040819,UT=20040812  
(c) 2004 WIPO/Univentio

Set	Items	Description
S1	21528	COMPRESS?(3N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED OR JPEG OR JPG OR - GIF OR TIFF? ? OR BITMAP? ? OR BMP)
S2	28336	COMPRESS?(3N) (CONTENT? ? OR DATA OR INFORMATION OR FILE? ? OR DOCUMENT? ? OR ARTICLE? ? OR TEXT? ? OR TEXTUAL OR EMAIL OR MAIL OR MESSAGE? ?)
S3	28714	COMPRESS??? (3N) (MAXIMUM OR MAXIMAL?? OR BEST OR HIGHEST OR GREATEST OR LARGEST OR SMALL??? OR MINIMUM OR MINIMAL OR LOW?? - ?? OR NOMINAL OR LEAST)
S4	135913	SIZE(5N) (SMALL??? OR MINIMUM OR MINIMAL OR LOW??? OR NOMINAL OR LEAST)
S5	9867	S3:S4(10N) (DETERMIN? OR ESTIMAT??? OR ASSESS? OR IDENTIF? - OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPUTE OR COMPUTES - OR COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR DISCERN?)
S6	678423	WEIGHT??? OR SCOR??? OR GRAD??? OR RATED OR RATING
S7	567153	HIGH() FREQUENCY() ENERGY OR COMPLEX? OR INTRICA? OR DENSITY
S8	837559	IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED
S9	17166	JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP
S10	984	S3:S4(10N) (IDENTIF???? OR IDENTIFICATION)
S11	50	S1:S2(50N) (S5 OR S10) (50N) QUALITY
S12	1339	S8:S9(7N) S6(7N) S7(7N) (DETERMIN? OR ESTIMAT? OR ASSESS? OR - IDENTIF???? OR IDENTIFICATION OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPUTE OR COMPUTES OR COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR DISCERN? OR ASSIGN??? OR GIVEN OR GIVING)
S13	19	S1:S2(50N) S12
S14	1051	HIGH() FREQUENCY() ENERGY
S15	4	S1:S2(50N) S14

11/3,K/8 (Item 8 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00962759

Photographic image compression method and system  
Bildkompressionsvorrichtung und -System für fotografische Bilder  
Procédé et système de compression d'image photographique

PATENT ASSIGNEE:

EASTMAN KODAK COMPANY, (201212), 343 State Street, Rochester, New York  
14650, (US), (Applicant designated States: all)

INVENTOR:

Bryniarski, Gregory R., c/o Eastman Kodak Company, Patent Legal Staff,  
343 State Street, Rochester, New York 14650-2201, (US)

Wilson, Brian R., c/o Eastman Kodak Company, Patent Legal Staff, 343  
State Street, Rochester, New York 14650-2201, (US)

LEGAL REPRESENTATIVE:

Haile, Helen Cynthia et al (60522), Kodak Limited Patent, W92-3A,  
Headstone Drive, Harrow, Middlesex HA1 4TY, (GB)

PATENT (CC, No, Kind, Date): EP 874520 A2 981028 (Basic)  
EP 874520 A3 991110

APPLICATION (CC, No, Date): EP 98201160 980411;

PRIORITY (CC, No, Date): US 842453 970424

DESIGNATED STATES: DE; FR; GB

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: H04N-001/41

ABSTRACT WORD COUNT: 74

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9844	444
SPEC A	(English)	9844	3428
Total word count - document A			3872
Total word count - document B			0
Total word count - documents A + B			3872

...SPECIFICATION because they are selected to accommodate the worst case scenario of all images containing high amounts of detail, will over-compress most images. Unfortunately, the more a photographic image is compressed, the more image quality that is lost. Over-compression of...

...addition, when a consumer has a photographic film processed and the images thereon scanned, with some images the degree of **compression** required even to barely fit the images on a limited storage medium, such as a diskette, will produce **compressed images** with unacceptable loss in image quality.

It is therefore desirable to have a compression method that **determines** the **minimum compression** necessary for a collection of images so that the actual compressed collection will fit within a limited storage space, such desirable if for a given collection of **images**, that the **compression** method recognizes that the compression required to fit the collection on such a fixed capacity medium produces unacceptable losses and compensates for this situation.

#### SUMMARY OF THE INVENTION

The present invention then, provides a method for **determining** the **minimum compression** needed to fit a collection of images within a limited storage space without undue wasting of the available space. That ...

...loss from a lossy compression method. Furthermore, the present invention provides a means for evaluating, for a given collection of **images**, when the **compression** required would produce unacceptable image quality loss, and for compensating for this situation.

In one aspect of the present invention there is provided a method of

compressing a collection of images using a variable compression function, comprising:

- (a) compressing the set using an initial function;
- (b) comparing the size of the resulting compressed image set...

11/3,K/9 (Item 9 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00957703

Bitstream quality analyzer

Bitstromqualitatatanalysator

Analyseur de la qualite d'un train numerique

PATENT ASSIGNEE:

Hewlett-Packard Company, (206030), 3000 Hanover Street, Palo Alto,  
California 94304, (US), (applicant designated states:  
AT;BE;CH;DE;DK;ES;FI;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)

INVENTOR:

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Leonard, Mark A., Unit 45, 11491 7th Avenue, Richmond, British Columbia,  
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LEGAL REPRESENTATIVE:

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PATENT (CC, No, Kind, Date): EP 869684 A2 981007 (Basic)

APPLICATION (CC, No, Date): EP 97121693 971209;

PRIORITY (CC, No, Date): US 832624 970404

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU;  
MC; NL; PT; SE

INTERNATIONAL PATENT CLASS: H04N-017/00; H04N-007/50;

ABSTRACT WORD COUNT: 168

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9841	950
SPEC A	(English)	9841	8488
Total word count - document A			9438
Total word count - document B			0
Total word count - documents A + B			9438

...SPECIFICATION frame (I, P, or B), and the amount of compressed video data in the various types of frames, the bitstream **quality** analyzer 190 calculates the amount of compressed video data in the compressed video data buffer and updates this calculation each...

...video data buffer and the amount of time the encoder believed a particular frame would be stored within the compressed **video data** buffer before that **compressed data** would be displayed and discarded (based on vbv(underscore)delay), and updates this calculation each frame. Although these two metrics...

...risk of buffer underflow or overflow, and to determine how well the encoder estimated the minimum size required for the **compressed video data** buffer and how well the encoder estimated the amount of time that frames would remain in the **compressed video data** buffer. Furthermore, each one of these metrics of buffer fullness allow one to assess the real-time decodability of the...

...status, the bitstream quality analyzer 190 provides information identifying the type of frame (I, P, or B), the amount of **compressed video data** in each type of frame, and the amount of bit stuffing (used by the encoder to achieve the target frame...

11/3,K/10 (Item 10 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

00930515

Subband image encoding method  
Teilbandbildkodierungsverfahren  
Methode de codage d'image par sous bandes

PATENT ASSIGNEE:

TEXAS INSTRUMENTS INC., (279076), 13500 North Central Expressway, Dallas,  
Texas 75243, (US),

INVENTOR:

Liang, Jie, 1800 E. Spring Creek Pkwy., N 535, Plano, Texas 75074, (US)

LEGAL REPRESENTATIVE:

Legg, Cyrus James Grahame et al (81121), ABEL & IMRAY, 20 Red Lion Street  
, London WC1R 4PQ, (GB)

PATENT (CC, No, Kind, Date): EP 848557 A2 980617 (Basic)  
EP 848557 A3 980722

APPLICATION (CC, No, Date): EP 97309207 971114;

PRIORITY (CC, No, Date): US 746702 961115

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU;  
MC; NL; PT; SE

INTERNATIONAL PATENT CLASS: H04N-007/26

ABSTRACT WORD COUNT: 26

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9825	36
SPEC A	(English)	9825	5466
Total word count - document A			5502
Total word count - document B			0
Total word count - documents A + B			5502

...SPECIFICATION dynamically adjusted depending upon the situation. The costs of telephone network bandwidth demand a low-bit-rate transmission. Indeed, very- **lowbit** -rate **video compression** finds use in **multimedia** applications where visual **quality** may be compromised. Figure 5 shows a first preferred embodiment surveillance system, generally denoted by reference numeral 200, as comprising...

...video cameras 202 focussed on stationary background 204 (with occasional moving objects 206 passing in the field of view) plus **video compressor** 208 together with remote storage 210 plus decoder and display 220. Compressor 208 provides compression of the stream of video...

...scene (for example, 30 frames a second with each frame 144 by 176 8-bit monochrome pixels) so that the **data** transmission rate from **compressor** 208 to storage 210 may be very low, for example 22 Kbits per second, while retaining high quality images. System...

11/3,K/11 (Item 11 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00885142

WAVELET BASED DATA COMPRESSION  
WAVELET-BASIERTE DATENKOMPRESSION  
COMPRESSION DE DONNEES SUR LA BASE D'ONDELETTES

PATENT ASSIGNEE:

Interval Research Corporation, (2003310), Building C, 1801 Page Mill Road  
, Palo Alto, CA 94304, (US), (Proprietor designated states: all)

INVENTOR:

KOLAROV, Krasimir, D., 2050 Avy Avenue, Menlo Park, CA 94025, (US)  
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SCHRODER, Peter, 1111 Blanche Street 201, Pasadena, CA 91106, (US)  
SWELDENS, Wim, Apartment 2B 23 Euclid Avenue, Summit, NJ 07901, (US)



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PATENT (CC, No, Kind, Date): EP 883864 A1 981216 (Basic)  
EP 883864 B1 020904  
WO 97032281 970904

APPLICATION (CC, No, Date): EP 97914842 970227; WO 97US3300 970227

PRIORITY (CC, No, Date): US 607388 960227

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G06T-009/00; G06T-009/40

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200236	396
CLAIMS B	(German)	200236	406
CLAIMS B	(French)	200236	435
SPEC B	(English)	200236	14825
Total word count - document A			0
Total word count - document B			16062
Total word count - documents A + B			16062

...SPECIFICATION wavelet coefficients.

In step 319 the error norms for the original data are determined. The original data is the image **data** before transformation or **compression**. Error norms are used to help evaluate the **quality** of the **compression**. For example, the **maximum** and the minimum of the pixel values are **calculated** to evaluate the **quality**. Other error norms calculated measure the difference between the original image and the resulting image. Mathematically, this means establishing a...

11/3,K/13 (Item 13 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00857111

**Video compression method and system**

**Verfahren und System zur Videokompression**

**Procede et systeme pour la compression video**

PATENT ASSIGNEE:

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INVENTOR:

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LEGAL REPRESENTATIVE:

Holt, Michael (50421), Texas Instruments Limited, P.O. Box 5069,  
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PATENT (CC, No, Kind, Date): EP 790741 A2 970820 (Basic)  
EP 790741 A3 000531

APPLICATION (CC, No, Date): EP 96307760 961025;

PRIORITY (CC, No, Date): US 5971 951027; US 5970 951027; US 8029 951027

DESIGNATED STATES: DE; FR; GB; IT; NL

INTERNATIONAL PATENT CLASS: H04N-007/26; H04N-007/66; H03M-013/00;  
H04N-007/30

ABSTRACT WORD COUNT: 104

NOTE:

Figure number on first page: 15A 15B

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9708W3	987
SPEC A	(English)	9708W3	11404
Total word count - document A			12391

Total word count - document B 0  
Total word count - documents A + B 12391

...SPECIFICATION transmission channel 16 over a suitable transmission medium 22 to a decompression decoder 18. The decompression decoder 18 decompresses the **compressed video** and audio signals and provides the decompressed signals to a video display and speaker 20. Of course, Figure 1 shows...dynamically adjusted depending upon the situation. The costs of telephone network bandwidth demand a low-bit-rate transmission. Indeed, very- **low -bit-rate video compression finds use in multimedia** applications where visual **quality** may be compromised.

Figure 2 shows a first preferred embodiment surveillance system, generally denoted by reference numeral 200, as comprising...

...video cameras 202 focused on stationary background 204 (with occasional moving objects 206 passing in the field of view) plus **video compressor** 208 together with remote storage 210 plus decoder and display 220. Compressor 208 provides compression of the stream of video...

...scene (for example, 30 frames a second with each frame 176 by 144 8-bit monochrome pixels) so that the **data** transmission rate from **compressor** 208 to storage 210 may be very low, for example 22 Kbits per second, while retaining high quality images. System...

11/3,K/14 (Item 14 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00829291

**METHOD AND APPARATUS FOR REDUCING STORAGE REQUIREMENTS FOR DISPLAY DATA**  
**VERFAHREN UND VORRICHTUNG ZUR VERMINDERUNG DES SPEICHERBEDARFS FUR**  
**ANZEIGEDATEN**  
**PROCEDE ET SYSTEME POUR REDUIRE LES BESOINS EN MEMOIRE POUR DES DONNEES**  
**D'AFFICHAGE**

PATENT ASSIGNEE:

ADOBE SYSTEMS INC., (1120814), Building E-1, 1585 Charleston Road,  
Mountain View California 94039, (US), (Proprietor designated states:  
all)

INVENTOR:

TYLER, William, B., 25505 Hacienda Place, Carmel, CA 93923, (US)  
FOSKETT, Nicholas, J., 801 Church Street 1316, Mountain View, CA 94041,  
(US)  
KONG, Soon, Y., 10597 Felton Way, Cupertino, CA 95014, (US)  
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LEGAL REPRESENTATIVE:

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Birkenhead Merseyside CH41 6BR, (GB)

PATENT (CC, No, Kind, Date): EP 834154 A1 980408 (Basic)  
EP 834154 A1 990127  
EP 834154 B1 030226  
WO 96041308 961219

APPLICATION (CC, No, Date): EP 96921460 960607; WO 96US9856 960607

PRIORITY (CC, No, Date): US 484344 950607

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G06K-015/00; G06T-009/00

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200309	1267
CLAIMS B	(German)	200309	1241
CLAIMS B	(French)	200309	1469
SPEC B	(English)	200309	20250
Total word count - document A			0
Total word count - document B			24227

Total word count - documents A + B 24227

...SPECIFICATION overall page characteristics can determine whether similar algorithms are to be used over the entire page to provide a uniform **quality** image, or can **determine** a particular **minimum compression** ratio to be used over the entire page based on the available storage space for the entire page. The process...

...bands and/or regions of the page that have been compressed, and can estimate ratios for bands yet to be **compressed** by examining **data** in collectors and in the band record. For example, a region can be assigned the same compression algorithm as a...

11/3,K/15 (Item 15 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00827459

Method and apparatus for image communication  
Verfahren und Vorrichtung für Bildkommunikation  
Procédé et appareil pour la communication d'images  
PATENT ASSIGNEE:

FUJITSU LIMITED, (211463), 1-1, Kamikodanaka 4-chome, Nakahara-ku,  
Kawasaki-shi, Kanagawa 211-8588, (JP), (Applicant designated States:  
all)

INVENTOR:

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Kawataka, Miyuki, c/o Fujitsu Limited, 1-1, Kamikodanaka 4-chome  
Nakahara-ku, Kawasaki-shi, Kanagawa 211, (JP)  
Matsumura, Naoya, Fujitsu Advanced Comm. Syst. Ltd, 21-1, Akebonocho  
1-chome, Tachikawa-shi, Tokyo 190, (JP)  
Takeda, Takayuki, Fujitsu Advanced Comm. Syst. Ltd, 21-1, Akebonocho  
1-chome, Tachikawa-shi, Tokyo 190, (JP)

LEGAL REPRESENTATIVE:

Ritter und Edler von Fischern, Bernhard, Dipl.-Ing. et al (9672),  
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München, (DE)

PATENT (CC, No, Kind, Date): EP 768798 A2 970416 (Basic)  
EP 768798 A3 990915

APPLICATION (CC, No, Date): EP 96116091 961008;

PRIORITY (CC, No, Date): JP 95261903 951009; JP 9686941 960409

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: H04N-007/24

ABSTRACT WORD COUNT: 196

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB97	4878
SPEC A	(English)	EPAB97	35674
Total word count - document A			40552
Total word count - document B			0
Total word count - documents A + B			40552

...SPECIFICATION fourth amount "d", where the fourth amount "d" is a positive real number larger than the second amount "b", the **compressed** image data amount CD can be controlled to normally vary in the proximity of the aimed value RT, which contributes...

...in proportion to the compressed image data amount CD is employed for the fourth amount "d". Consequently, even if the **compressed image data** amount CD in a calculation cycle exceeds an allowable maximum value, the **compressed image data** amount CD in a next calculation cycle can be controlled to a value lower than the allowable maximum value with

certainty. Consequently, the possibility that the **compressed image data** amount CD may exceed the allowable maximum value can be reduced significantly.

Or, the transmission apparatus may be constructed such...

...value RTup)) for the aimed value RT, and the scaling factor calculation processing section is constructed such that, when the **compressed image data** amount CD is lower than the aimed lower limit value RTdn)), the scaling factor value SF is decreased by the...possibility that the compressed image data amount CD may exceed the allowable range can be reduced significantly and the picture **quality** can be improved significantly.

Alternatively, the transmission apparatus may be constructed such that the threshold value setting section sets in...

...image data amount Rc)) set as the threshold value by the threshold value setting section, processing to transmit only those **compressed data** of an amount equal to or less than the maximum **compressed image data** amount Rc)) and notifies the reception side of the **compressed data** that the **compressed image data** amount CD has exceeded the maximum **compressed image data** amount Rc)), a required buffer amount can be reduced remarkably, which contributes very much to reduction in size and cost...

11/3,K/16 (Item 16 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00801467

Digital video production system storing twice the same video data along with correlated edit time code information on respective two removable storage media at different rate of compression

Digitalvideo-Produktionssystem mit doppelter Speicherung derselben Videodaten einschliesslich zugehöriger Zeitmarken für Schnittbearbeitung auf entsprechenden zwei wechselbaren Datenträgern und mit jeweils unterschiedlichem Kompressionsgrad

Système de production vidéo numérique à double enregistrement de la même information vidéo, accompagnée de codes de temps pour montage vidéo, sur deux moyens de stockage échangeables respectifs avec taux de compression différents.

PATENT ASSIGNEE:

Washino, Kinya, (1867681), 750 Huyler Street, Teterboro, NJ 07608, (US),  
(Proprietor designated states: all)

INVENTOR:

WASHINO, Kinya, 750, Huyler Street, Teterboro, NJ 07608, (US)

SCHWAB, Barry, H., 5298 Cedarhurst, West Bloomfield, MI 48322, (US)

LEGAL REPRESENTATIVE:

Naismith, Robert Stewart et al (57811), CRUIKSHANK & FAIRWEATHER 19 Royal Exchange Square, Glasgow, G1 3AE Scotland, (GB)

PATENT (CC, No, Kind, Date): EP 812509 A1 971217 (Basic)  
EP 812509 B1 020612  
WO 9627263 960906

APPLICATION (CC, No, Date): EP 96908588 960301; WO 96US2779 960301

PRIORITY (CC, No, Date): US 396574 950301

DESIGNATED STATES: DE; FR; GB; NL

INTERNATIONAL PATENT CLASS: H04N-005/76; G11B-027/031

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200224	1967
CLAIMS B	(German)	200224	1767
CLAIMS B	(French)	200224	2372
SPEC B	(English)	200224	3970
Total word count - document A			0
Total word count - document B			10076
Total word count - documents A + B			10076

...SPECIFICATION controlling the various storage devices so as to produce highly complicated sequences in a convenient and timely manner. While the lower - quality (higher data - compression ratio) program materials are utilized only for determining the edit points (edit decision list) for the program, the off-line editing system described herein below is capable of producing the final edited version of the program with high-quality results in accordance with the preferred embodiment.

The versatility of the system may be further enhanced if planning for the...

11/3,K/17 (Item 17 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
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00769413

Method and apparatus for multiple quality transaction card images  
Verfahren und Vorrichtung zum Speichern von Bildern mit veränderbarer  
Qualität auf Transaktionskarten  
Methode et appareil pour le stockage d'images a qualite variable pour  
cartes de transaction

PATENT ASSIGNEE:

EASTMAN KODAK COMPANY, (201212), 343 State Street, Rochester, New York  
14650, (US), (applicant designated states: DE;FR;GB)

INVENTOR:

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PATENT (CC, No, Kind, Date): EP 721174 A2 960710 (Basic)  
EP 721174 A3 990120

APPLICATION (CC, No, Date): EP 95203638 951227;

PRIORITY (CC, No, Date): US 369015 950105

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G07F-007/10; G07C-009/00;

ABSTRACT WORD COUNT: 169

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	554
SPEC A	(English)	EPAB96	2867
Total word count - document A			3421
Total word count - document B			0
Total word count - documents A +B			3421

...ABSTRACT A2

The disclosed method for compressing an image to be stored on a transaction card at one of a plurality of quality levels performs the steps of: a. providing a number of compression codebooks each corresponding to a quality level of the to be compressed image data; b. determining the quality level of the compressed image to be stored on the transaction card; c. determining the compression codebook that best corresponds to the determined quality level of step b; and d. compressing the image with the determined compression codebook. A decompression system is disclosed for processing, the transaction cards having the compressed image data stored thereon at one of a plurality of quality levels by, determining the maximum quality level common to the transaction card and the decompression system; and decompressing the compressed image data at the above maximum quality level. (see image in original document)

11/3,K/33 (Item 14 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00838265 \*\*Image available\*\*

**TRANSMARKING, WATERMARK EMBEDDING FUNCTIONS AS RENDERING COMMANDS, AND  
FEATURE-BASED WATERMARKING OF MULTIMEDIA SIGNALS**  
**TRANSMARQUAGE, FONCTIONS D'INCORPORATION DE FILIGRANE COMME COMMANDES DE  
RESTITUTION, ET FILIGRANAGE A CARACTERISTIQUES DE SIGNAUX MULTIMEDIA**

Patent Applicant/Assignee:

DIGIMARC CORPORATION, 19801 SW 72nd Avenue, Suite 250, Tualatin, OR 97062  
, US, US (Residence), US (Nationality), (For all designated states  
except: US)

Patent Applicant/Inventor:

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(Residence), US (Nationality), (Designated only for: US)  
DECKER Stephen K, 2530 Orchard Hill Place, Lake Oswego, OR 97035, US, US  
(Residence), US (Nationality), (Designated only for: US)

Legal Representative:

MEYER Joel R (agent), Digimarc Corporation, 19801 SW 72nd Avenue, Suite  
250, Tualatin, OR 97062, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200171960 A1 20010927 (WO 0171960)  
Application: WO 2001US8315 20010316 (PCT/WO US0108315)  
Priority Application: US 2000190481 20000318; US 2000563664 20000502; US  
2000257822 20001221

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE  
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT  
LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM  
TR TT TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 14035

Fulltext Availability:

Detailed Description

Detailed Description

... the signal transformation process selects the embedding method and  
parameters that adapt the robustness of the embedded watermark and  
perceptual **quality** of the rendered watermarked signal for the  
particular rendering process or transmission channel. For example, an  
audio processor renders a...

...specify that the watermark be embedded as part of the signal formatting  
process, such as part of the process of **compressing** the **image**, **video**  
or audio signal. This enables the watermark module to interact with the  
compression process to embed the watermark so that it is adapted to that  
format, e.g., embedding in the **compressed data** stream or partially  
**compressed** stream. The compression rate of the signal can be adaptively  
set by **determining** the **greatest** extent of **compression** where the  
watermarked signal still survives based on an error detection 1 0  
measure. Similarly, the perceptual **quality** parameters may be used to  
tune the compression process so that the compression rate is selected  
that maintains the desired perceptual **quality** of the signal and the  
robustness level of the watermark signal.

Alternatively, the watermark function can specify that the watermark...

DIALOG(R)File 349:PCT FULLTEXT  
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00835869   \*\*Image available\*\*

A METHOD AND APPARATUS FOR PERFORMING A CONTRAST BASED DYNAMIC RANGE  
MANAGEMENT ALGORITHM  
PROCEDE ET APPAREIL PERMETTANT D'EXECUTER UN ALGORITHME DE GESTION A PLAGE  
DYNAMIQUE SE BASANT SUR LE CONTRASTE

Patent Applicant/Assignee:

GENERAL ELECTRIC COMPANY, 1 River Road, Schenectady, NY 12345, US, US  
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NEVIN Robert Leland, 4 Seneca Road, Schenectady, NY 12309, US,  
LIENARD Jean, 155, rue Estienne d'Orves, F-92140 Clamart, FR,

Legal Representative:

BENINATI John F (et al) (agent), General Electric Company, 3135 Easton  
Turnpike W3C, Fairfield, CT 06431, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200169532 A1 20010920 (WO 0169532)  
Application: WO 2001US4918 20010215 (PCT/WO US0104918)  
Priority Application: US 2000522384 20000310  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Publication Language: English

Filing Language: English

Fulltext Word Count: 10999

Fulltext Availability:

Detailed Description

Detailed Description

... appropriate setting which best accommodates

5

the dynamic range of a given image, the displayed image may have poor  
image **quality**. In many cases, this may result in the loss of more high  
frequency contrast information than is necessary to perform...

...which

adaptively adjusts to the dynamic range of the image, so that high  
frequency contrast information is preserved, while applying **minimal**  
**compression** to display the **image** in a more **deterministic** manner and  
with reduced complexity.

BRIEF SUMMARY OF THE INVENTION

The invention provides a method, a related memory medium and an  
apparatus for implementing and performing a contrast-based dynamic range  
I 0 management (C-DRM) algorithm, to **compress** input **image data** of a  
broad dynamic range of intensities to a reduced dynamic range (e.g., 256  
levels) of an available display...

11/3,K/35       (Item 16 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT  
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00807780   \*\*Image available\*\*

METHOD AND APPARATUS FOR PACKET DELAY REDUCTION USING SCHEDULING AND HEADER  
COMPRESSION

PROCEDE ET APPAREIL POUR LA REDUCTION DU RETARD DE TRANSMISSION DE PAQUETS,  
DANS LESQUELS L'ORDONNANCEMENT ET LA COMPRESSION D'EN-TETES SONT  
UTILISES

Patent Applicant/Assignee:

TELEFONAKTIEBOLAGET LM ERICSSON (publ), S-126 25 Stockholm, SE, SE  
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Inventor(s):

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Legal Representative:

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Research/Patent Support Unit, S-164 80 Stockholm, SE,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200141397 A1 20010607 (WO 0141397)  
Application: WO 2000SE2187 20001108 (PCT/WO SE0002187)  
Priority Application: US 99451081 19991130

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE  
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT  
LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM  
TR TT TZ UA UG UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 8116

Fulltext Availability:

Detailed Description

Detailed Description

... are designed to propagate scheduling information to the segments or  
fragments. Header compression, however, makes IP scheduling difficult.  
When header **compression** is used, **information** including the  
**identification** field in the IP header becomes unavailable to **lower**  
layers after **compression**. If a HC packet is dropped, the resulting  
missing sequence number at the receiver will cause problems on the link  
...dropped and will thus be unable to request the dropped packet from  
higher layers, introducing further delay and degradation of **quality**.

Therefore, it would be appreciated in the art for a method and apparatus  
which handles scheduling and reduces the adverse...

11/3,K/36 (Item 17 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00757158 \*\*Image available\*\*

**IMAGE ARTIFACT REDUCTION USING MAXIMUM LIKELIHOOD PARAMETER ESTIMATION**  
**REDUCTION DES ARTEFACTS IMAGES UTILISANT DES ESTIMATIONS DE PARAMETRES A**  
**VRAISSEMBLANCE MAXIMUM**

Patent Applicant/Assignee:

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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200070548 A1 20001123 (WO 0070548)  
Application: WO 2000US12989 20000512 (PCT/WO US0012989)  
Priority Application: US 99134155 19990514

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB  
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA  
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA



UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 6722

Fulltext Availability:

Detailed Description

Detailed Description

... It is desirable to

obtain an image that is as free of compression-related artifacts as possible, thus improving image **quality** at low bit rates.

An artifact-free image can be **estimated** from the **compressed image** by **maximum a posteriori (MAP) estimation** techniques. The problem is to generate an artifact-free estimate  $f'$  of an original **image**  $f$  given a **compressed image**  $g$ . In MAP estimation approaches, the estimate  $f'$  is considered to be a random variable whose properties are modeled by...

11/3,K/37 (Item 18 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00753660 \*\*Image available\*\*

**SYSTEM AND METHOD TO QUANTIFY APPEARANCE DEFECTS IN MOLDED PLASTIC PARTS**  
**SYSTEME ET PROCEDE POUR QUANTIFIER LES DEFAUTS DE PRESENTATION DANS DES**  
**PIECES PLASTIQUES MOULEES**

Patent Applicant/Assignee:

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Legal Representative:

SNYDER Bernard, General Electric Company, 3135 Easton Turnpike W3C, Fairfield, CT 06431, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200067004 A1 20001109 (WO 0067004)

Application: WO 2000US9489 20000411 (PCT/WO US0009489)

Priority Application: US 99303409 19990503

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

JP SG

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Filing Language: English

Fulltext Word Count: 8167

Fulltext Availability:  
Claims

Claim

... plastic through said gate (37).

5 The system of claim 1, wherein said computerized device (101) further comprises:

computerized **data compression** means (511) for calculating

**compressed data** by filtering out local noise below a predetermined threshold,

from said raw data (50);

computerized first iteration filtering means (512) for calculating first iteration filtered data by **identifying** local extreme points comprising maximum

and **minimum** points in said **compressed data** ;

computerized second iteration filtering means (513) for **calculating**

second iteration filtered data by removing from said first iteration filtered data, any of said local extreme points that...

...point on an other side thereof.

6 The system of claim 5, wherein said computerized device (101) further comprises:

computerized **quality** calculation means for calculating (514) and linearizing (515) from said final iteration filtered data graph, a quality number

Q given...

11/3,K/38 (Item 19 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00576660 \*\*Image available\*\*

VIDEO MEMORY MANAGEMENT FOR MPEG VIDEO DECODE AND DISPLAY SYSTEM

GESTION DE MEMOIRE VIDEO POUR SYSTEME DE DECODAGE ET D'AFFICHAGE VIDEO

Patent Applicant/Assignee:

ZORAN CORPORATION,

Inventor(s):

GILL Aharon,

ROSENTHAL Elan,

FRAENKEL Miri,

OFIR Ram,

ANISMAN David,

IRONI Alon,

GOLDBERG Paul R,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200040033 A1 20000706 (WO 0040033)

Application: WO 98US27479 19981223 (PCT/WO US9827479)

Priority Application: WO 98US27479 19981223

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 14908

Fulltext Availability:

Detailed Description

Detailed Description

... diffusion algorithm,, multiple-bits

error diffusion algorithm can be implemented similarly, however, with a tradeoff of loss in perceptible picture

**quality** ,

The second step of the **video data compression**

is the "drop one pixel per quartet" (step 1420). The

drop one pixel per quartet algorithm compresses a

quartet of four 7-bits pixels to a 24-bits quartet. The  
**data compressor calculates the best** pixel of a quartet  
to be dropped and stores the reconstruction method in  
the last three bits of the quartet...

...will be described later.

When the video data is needed from the video  
memory, the FlexiRam performs decompression to the  
**compressed data** read from the memory, The decompression  
steps are the inverse of the compression steps as shown  
in Figure 14.

First...

11/3,K/39 (Item 20 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00554357 \*\*Image available\*\*

**METHOD OF COMPRESSING AND DECOMPRESSING GRAPHIC IMAGES**  
**PROCEDE DE COMPRESSION ET DE DECOMPRESSION D'IMAGES GRAPHIQUES**

Patent Applicant/Assignee:

FUJITSU MICROELECTRONICS INC,

Inventor(s):

OSTROVSKY Alex,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200017730 A2 20000330 (WO 0017730)

Application: WO 99US22081 19990923 (PCT/WO US9922081)

Priority Application: US 98160504 19980924

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

JP KR AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 9185

Fulltext Availability:

Claims

Claim

... of the red, green, and blue values of all the pixels in the block.

20 A computer-implemented method of **compressing graphics image**  
**data** into at **least** one **compressed** block comprising the steps of(A)  
**computing** a work bit value representing a number of significant bits for  
each

red, green, blue, and intensity values;

(B) computing a **quality** level value representing a desired level of  
**quality** of  
graphics image data;

(C) reading a block of graphics image data, the block having a plurality  
of pixels, each...

11/3,K/40 (Item 21 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00526532 \*\*Image available\*\*

**DATA COMPRESSION**

**COMPRESSION DE DONNEES**

Patent Applicant/Assignee:

KONINKLIJKE PHILIPS ELECTRONICS N V,

PHILIPS AB,

Inventor(s):

BAILLEUL Nicolas,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9957884 A2 19991111  
Application: WO 99IB724 19990422 (PCT/WO IB9900724)  
Priority Application: EP 98401053 19980430; EP 98401721 19980707  
Designated States:  
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)  
CN JP KR AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
Publication Language: English  
Fulltext Word Count: 5868

Fulltext Availability:  
Detailed Description

Detailed Description  
... allocation.

#### SUMMARY OF THE INVENTION

It is an object of the invention to provide data compression which yields a better **quality** .

The invention takes the following aspects into consideration. It is advantageous to compress data to such an extent that an...

...of data because the data-handling capacity of the receiving entity is not used to its full extent. If the **data** is **compressed** to a smaller extent, there will also be an unnecessary loss of data because the receiving entity will not be able to handle a certain portion of the **compressed data** and, consequently, this portion will be lost. Thus, the quality of the **data compression** , in terms of minimal loss of information, is substantially influenced by a compression parameter determining to which extent the **data** is **compressed** .

The background art cited applies the following principle for adjusting a **compression** parameter in WEG **video** coding. At the beginning of a group of pictures, an initial value of the compression parameter is calculated. The initial value of the compression parameter corresponds to the amount of **compressed data** which should preferably be obtained by **compressing** the **data** representing the group of pictures. On the basis of experiences in compressing a previous group of pictures, typical intermediate results are defined in terms of amounts of **compressed data** . A typical intermediate result is defined for each successive picture in the group. For each picture, the initial compression parameter ...

11/3,K/41 (Item 22 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
(c) 2004 WIPO/Univentio. All rts. reserv.

00498928 \*\*Image available\*\*

#### IMPROVED IMAGE CONVERSION AND ENCODING TECHNIQUES CONVERSION D'IMAGES AMELIOREE ET TECHNIQUES DE CODAGE

Patent Applicant/Assignee:

DYNAMIC DIGITAL DEPTH RESEARCH PTY LTD,  
HARMAN Philip Victor,

Inventor(s):

HARMAN Philip Victor,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9930280 A1 19990617  
Application: WO 98AU1005 19981203 (PCT/WO AU9801005)  
Priority Application: AU 97778 19971205; AU 982865 19980408

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH  
GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW  
MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW  
GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK

ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE  
SN TD TG

Publication Language: English

Fulltext Word Count: 9872

Fulltext Availability:

Detailed Description

Detailed Description

... the

operator(s) undertake the object manipulation.

6. Since the results of the manipulation result in the object outlines being **identified**, the data for which may be subsequently **compressed**, the **file size** will generally be substantially **smaller** than the original images. This being the case the object information may conveniently be returned to the supervisor 25 using on-line email services.

7. The supervisor undertakes **quality** control on the object outlines received and matches the frame numbers to the original video source material.

8. The supervisor...

11/3,K/42 (Item 23 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00421267 \*\*Image available\*\*

**METHOD, APPARATUS AND SYSTEM FOR COMPRESSING DATA**

**PROCEDE, APPAREIL ET SYSTEME DE COMPRESSION DE DONNEES**

Patent Applicant/Assignee:

WDE INC,

ZADOR Andrew Michael,

Inventor(s):

ZADOR Andrew Michael,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9811728 A1 19980319

Application: WO 97CA452 19970625 (PCT/WO CA9700452)

Priority Application: US 96668753 19960624

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT  
RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN GH KE LS MW SD SZ UG ZW  
AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL  
PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 20302

English Abstract

An apparatus and method for **image data compression** performs a modified zero-tree coding on a range of absolute image values from the largest to a **determined smaller** absolute value, based upon **file size** or **quality**. If it is desired to maintain more detail in the image, then a vector quantizer codes the remaining values below...

...determined smaller value can be adjusted by examination of the histogram of the tree, or iteratively to meet a preselected **compressed image** size criterion or to meet a predefined level of image **quality**, as determined by any suitable metric. If the **image** to be **compressed** is in RGB color space, the apparatus converts the RGB image to a less redundant color space before commencing further...

15/3,K/1 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01081862

**ESTIMATING GRAPHICS SYSTEM PERFORMANCE FOR POLYGONS**  
**VERFAHREN UND VORRICHTUNG ZUR ABSCHATZUNG DER LEISTUNG EINES GRAFISCHEN**  
**SYSTEMS VON POLYGONEN**

**ESTIMATION DE LA PERFORMANCE D'UN SYSTEME GRAPHIQUE POUR DES POLYGONES**

**PATENT ASSIGNEE:**

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**INVENTOR:**

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**LEGAL REPRESENTATIVE:**

Harris, Ian Richard (72231), D. Young & Co., 21 New Fetter Lane, London  
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PATENT (CC, No, Kind, Date): EP 1055199 A1 001129 (Basic)

EP 1055199 B1 020522

WO 9941704 990819

APPLICATION (CC, No, Date): EP 99907042 990216; WO 99US3227 990216

PRIORITY (CC, No, Date): US 74838 P 980217

DESIGNATED STATES: DE; FR; GB; IE

INTERNATIONAL PATENT CLASS: G06T-015/00

**NOTE:**

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

**FULLTEXT AVAILABILITY:**

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200221	1997
CLAIMS B	(German)	200221	1831
CLAIMS B	(French)	200221	2295
SPEC B	(English)	200221	14716

Total word count - document A 0

Total word count - document B 20839

Total word count - documents A + B 20839

...SPECIFICATION the lower spatial frequency areas that most objects have.  
This is similar to the statistical argument that successfully lets 2D  
**image compression** techniques not encode **high frequency energy** at  
all areas of most images, with few visually perceptible artifacts. Note  
also that most artifacts of Gouraud shading disappear...

15/3,K/2 (Item 2 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00540013

**Image processing**  
**Bildverarbeitung**  
**Traitement d'image**

**PATENT ASSIGNEE:**

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Tokyo, (JP), (applicant designated states: DE;FR;GB)

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Court High Holborn, London WC1R 5DJ, (GB)

PATENT (CC, No, Kind, Date): EP 514167 A2 921119 (Basic)

EP 514167 A3 940216

EP 514167 B1 980812

APPLICATION (CC, No, Date): EP 92304344 920514;

PRIORITY (CC, No, Date): JP 91109999 910515; JP 91110213 910515; JP  
91110214 910515; JP 91110215 910515; JP 91110216 910515; JP 91148437  
910620

DESIGNATED STATES: DE; FR; GB  
INTERNATIONAL PATENT CLASS: H04N-007/30; H04N-005/235; H04N-005/20;  
H04N-005/21; H04N-005/243;  
ABSTRACT WORD COUNT: 137

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9833	408
CLAIMS B	(German)	9833	373
CLAIMS B	(French)	9833	471
SPEC B	(English)	9833	7653
Total word count - document A			0
Total word count - document B			8905
Total word count - documents A + B			8905

...SPECIFICATION and the coder 107 encodes the output of the quantizer 106 (S47).

After quantization and coding, the completion of an **image compression** is displayed on the ...S48).

In short, according to the present embodiment, in the case where the image level is relatively low and the **high frequency energy** of the image is a considerable amount, the level of the high frequency component is reduced or quantization is performed...

15/3,K/3 (Item 3 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
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00268764

**Multiplex signal processing apparatus.**  
**Verarbeitungseinrichtung für multiplexe Signale.**  
**Appareil de traitement de signal multiplexe.**

PATENT ASSIGNEE:

MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD., (216883), 1006, Oaza Kadoma, Kadoma-shi, Osaka-fu, 571, (JP), (applicant designated states: DE;FR;GB;NL)

INVENTOR:

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Takai, Hitoshi, Syokei-ryo 7-4-2, Kourigaoka, Hirakata-shi Osaka-fu, 573, (JP)  
Matsumoto, Mitsujiro, 1-20, Mita-cho, Shijounawate-shi Osaka-fu, 575, (JP)  
Aono, Kouji, c/o Masao HORIO 537, Teizuikamigumi, Saijyo-shi Ehime-ken, 799-11, (JP)  
Uchimura, Kiyoshi, 1-24-17, Himurodai, Hirakata-shi Osaka-fu, 573, (JP)  
Iwasaki, Eiji, Syoei-ryo 30-23, Miyukihigashimach, Neyagawa-shi Osaka-fu, 572, (JP)

LEGAL REPRESENTATIVE:

Spencer, Graham Easdale et al (36211), A.A. Thornton & CO Northumberland House 303-306, High Holborn, London WC1V 7LE, (GB)

PATENT (CC, No, Kind, Date): EP 253623 A2 880120 (Basic)  
EP 253623 A3 881214  
EP 253623 B1 930310

APPLICATION (CC, No, Date): EP 87306208 870714;

PRIORITY (CC, No, Date): JP 86164915 860714; JP 86180338 860731; JP 86180333 860731; JP 86231666 860930; JP 86252225 861023

DESIGNATED STATES: DE; FR; GB; NL  
INTERNATIONAL PATENT CLASS: H04N-011/00;  
ABSTRACT WORD COUNT: 229

LANGUAGE (Publication,Procedural,Application): English; English; English

# FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	3445
CLAIMS B	(German)	EPBBF1	1010
CLAIMS B	(French)	EPBBF1	1555
SPEC B	(English)	EPBBF1	16526
Total word count - document A			0
Total word count - document B			22536
Total word count - documents A + B			22536

...SPECIFICATION by the selectors 146, 147.

The signal expanded in the time-axis is widened in the band when the time- **axis** is **compressed** at the reception side, and therefore the resolution is not lowered even if the aspect ratio becomes larger. The multiplex signal not appearing on the screen of aspect ratio of 4:3, for example, **corresponding to the** information out of both sides of the screen, is nearly canceled in the conventional receiver by synchronous detection using the...

15/3,K/4 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00510352 \*\*Image available\*\*

ESTIMATING GRAPHICS SYSTEM PERFORMANCE FOR POLYGONS

ESTIMATION DE LA PERFORMANCE D'UN SYSTEME GRAPHIQUE POUR DES POLYGOUES

Patent Applicant/Assignee:

SUN MICROSYSTEMS INC,

Inventor(s):

DEERING Michael F,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9941704 A1 19990819

Application: WO 99US3227 19990216 (PCT/WO US9903227)

Priority Application: US 9874838 19980217

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH  
GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW  
MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH  
GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES  
FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN  
TD TG

Publication Language: English

Fulltext Word Count: 17661

Fulltext Availability:

Detailed Description

Detailed Description

... the lower spatial frequency areas that most objects have. This is similar to the statistical argument that successfully lets 2D **image compression** techniques not encode **high frequency energy** at all areas of most images, with few visually perceptible artifacts. Note also that most artifacts of Gouraud shading disappear...



File 8: Ei Compendex(R) 1970-2004/Aug W3  
 (c) 2004 Elsevier Eng. Info. Inc.  
 File 35: Dissertation Abs Online 1861-2004/Jul  
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 File 94: JICST-EPlus 1985-2004/Aug W1  
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 File 6: NTIS 1964-2004/Aug W3  
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 File 144: Pascal 1973-2004/Aug W3  
 (c) 2004 INIST/CNRS  
 File 434: SciSearch(R) Cited Ref Sci 1974-1989/Dec  
 (c) 1998 Inst for Sci Info  
 File 34: SciSearch(R) Cited Ref Sci 1990-2004/Aug W3  
 (c) 2004 Inst for Sci Info  
 File 99: Wilson Appl. Sci & Tech Abs 1983-2004/Jul  
 (c) 2004 The HW Wilson Co.  
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 File 95: TEME-Technology & Management 1989-2004/Jun W1  
 (c) 2004 FIZ TECHNIK  
 File 248: PIRA 1975-2004/Aug W2  
 (c) 2004 Pira International

Set	Items	Description
S1	75682	COMPRESS?(3N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED OR JPEG OR JPG OR - GIF OR TIFF? ? OR BITMAP? ? OR BMP)
S2	76913	COMPRESS?(3N) (CONTENT? ? OR DATA OR INFORMATION OR FILE? ? OR DOCUMENT? ? OR ARTICLE? ? OR TEXT? ? OR TEXTUAL OR EMAIL OR MAIL OR MESSAGE? ?)
S3	26116	COMPRESS??? (3N) (MAXIMUM OR MAXIMAL?? OR BEST OR HIGHEST OR GREATEST OR LARGEST OR SMALL??? OR MINIMUM OR MINIMAL OR LOW - OR LOWER OR LOWEST OR NOMINAL OR LEAST)
S4	188296	SIZE(5N) (SMALL??? OR MINIMUM OR MINIMAL OR LOW OR LOWER OR LOWEST OR NOMINAL OR LEAST)
S5	21226	S3:S4(10N) (DETERMIN? OR ESTIMAT??? OR ASSESS? OR IDENTIF? - OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPUTE OR COMPUTES - OR COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR DISCERN?)
S6	2464919	WEIGHT??? OR SCOR??? OR GRAD??? OR RATED OR RATING
S7	5429586	HIGH() FREQUENCY() ENERGY OR COMPLEX? OR INTRICA? OR DENSITY
S8	5987969	IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED
S9	28180	JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP
S10	214	S5(10N) QUALITY
S11	30	S1:S2 AND S10
S12	18	RD (unique items)
S13	16	S12 NOT PY=2003:2004
S14	18254	S1 AND QUALITY
S15	1200	S3 AND S14
S16	1625	S6(7N) S8:S9(7N) S7(7N) (DETERMIN? OR ESTIMAT? OR ASSESS? OR - IDENTIF???? OR IDENTIFICATION OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPUTE OR COMPUTES OR COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR DISCERN? OR ASSIGN??? OR GIVEN OR GIVING)
S17	36	S1:S2 AND S16
S18	19	RD (unique items)
S19	630	HIGH() FREQUENCY() ENERGY
S20	9	S1:S2 AND S19
S21	7	RD (unique items)

4

S22	273	AU=(GETZINGER, T? OR MALVAR, H? OR GETZINGER T? OR MALVAR -
		H?)
S23	43	S1:S2 AND S22
S24	16	(S7 OR QUALITY) AND S23
S25	10	RD (unique items)

13/5/1 (Item 1 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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06336424 E.I. No: EIP03137413591

**Title: A novel rate-distortion analysis framework for JPEG coding**  
Author: He, Zhihai; Kim, Yong Kwan; Mitra, Sanjit K.  
Corporate Source: Dept. of Elec./Computer Engineering University of California, Santa Barbara, CA 93106, United States  
Conference Title: Proceedings of the 22nd Picture Coding Symposium: PCS-2001  
Conference Location: Seoul, South Korea Conference Date: 20010425-20010427  
Sponsor: Korea Institute of Communication Sciences  
E.I. Conference No.: 60525  
Source: 22nd Picture Coding Symposium 2001.  
Publication Year: 2001  
Language: English  
Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)  
Journal Announcement: 0303W5

Abstract: In this work, by introducing the new concepts of characteristic rate curves and rate curve decomposition, a novel framework for rate-distortion (R-D) analysis is developed. With this framework, we propose a fast algorithm to accurately predict the R-D curve of the **JPEG compression** system before quantization and coding. The proposed algorithm has very low computational complexity. With the estimated R-D curve, we can accurately control the output bit rate and picture **quality** for still **image compression**. To our **best** knowledge, this is the first algorithm which can accurately **estimate** the R-D curve before quantization and coding. 5 Refs.

Descriptors: **Image coding; Image compression; Image quality;**  
Error analysis; Computational complexity; Algorithms  
Identifiers: Rate-distortion (R-D) analysis  
Classification Codes:  
723.2 (Data Processing); 921.6 (Numerical Methods); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory))  
723 (Computer Software, Data Handling & Applications); 741 (Light, Optics & Optical Devices); 921 (Applied Mathematics); 721 (Computer Circuits & Logic Elements)  
72 (COMPUTERS & DATA PROCESSING); 74 (LIGHT & OPTICAL TECHNOLOGY); 92 (ENGINEERING MATHEMATICS)

13/5/2 (Item 2 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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06296854 E.I. No: EIP03077362909

**Title: Wavelet based image compression using subband threshold**  
Author: Muzaffar, Tanzeem; Cho, Tae-Sun  
Corporate Source: SIPL Mechatronics Department Kwangju Inst. of Sci. and Technology, Puk Gu, Kwangju, South Korea  
Conference Title: Applications of Digital Image Processing XXV  
Conference Location: Seattle, WA, United States Conference Date: 20020708-20020710  
Sponsor: SPIE  
E.I. Conference No.: 60678  
Source: Proceedings of SPIE - The International Society for Optical Engineering v 4790 2002. p 491-498  
Publication Year: 2002  
CODEN: PSISDG ISSN: 0277-786X  
Language: English  
Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)  
Journal Announcement: 0302W3  
Abstract: Wavelet based **image compression** has been a focus of

research in recent days. In this paper, we propose a compression technique based on modification of original EZW coding. In this lossy technique, we try to discard less significant information in the image data in order to achieve further **compression** with **minimal** effect on output image **quality**. The algorithm **calculates** weight of each subband and finds the subband with minimum weight in every level. This minimum weight subband in each level, that contributes least effect during image reconstruction, undergoes a threshold process to eliminate low-valued data in it. Zerotree coding is done next on the resultant output for compression. Different values of threshold were applied during experiment to see the effect on **compression** ratio and reconstructed **image** quality. The proposed method results in further increase in compression ratio with negligible loss in image quality. 12 Refs.

Descriptors: **Image compression**; Wavelet transforms; **Image** coding; Image quality; Image reconstruction; Algorithms; Cosine transforms

Identifiers: Subband threshold; Zerotree coding; Compression ratio; Discrete cosine transform; Discrete wavelet transform

Classification Codes:

723.2 (Data Processing); 921.3 (Mathematical Transformations); 723.5 (Computer Applications)

723 (Computer Software, Data Handling & Applications); 921 (Applied Mathematics)

72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

13/5/3 (Item 3 from file: 8)

DIALOG(R)File 8: Ei Compendex(R)

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06245395 E.I. No: EIP02517288912

**Title: Video quality assessment using structural distortion measurement**

Author: Wang, Zhou; Lu, Ligang; Bovik, Alan C.

Corporate Source: Lab. of Image and Video Eng. Dept. of ECE The Univ. of Texas at Austin, Austin, TX 78703-1084, United States

Conference Title: International Conference on Image Processing (ICIP'02)

Conference Location: Rochester, NY, United States Conference Date: 20020922-20020925

Sponsor: IEEE Signal Processing Society

E.I. Conference No.: 60384

Source: IEEE International Conference on Image Processing v 3 2002. p III/65-III/68 (IEEE cat n 02ch37396)

Publication Year: 2002

CODEN: 85QTAW

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 0212W5

Abstract: Objective image/video quality measures play important roles in various image/video processing applications, such as compression, communication, printing, analysis, registration, restoration and enhancement. Most proposed quality assessment approaches in the literature are error sensitivity-based methods. In this paper, we follow a new philosophy in designing image/video quality metrics, which uses structural distortion as an estimation of perceived visual distortion. We develop a new approach for video quality assessment. Experiments on the video quality experts group (VQEG) test data set shows that the new quality measure has higher correlation with subjective quality measurement than the proposed methods in VQEG's Phase I tests for full-reference video quality assessment. 11 Refs.

Descriptors: **Image quality**; Image **compression**; Restoration; Image enhancement; **Least** squares approximations; Approximation theory; **Measurement** errors

Identifiers: Video quality assessment; Structural distortion measurement; Video quality experts group

Classification Codes:

723.2 (Data Processing); 921.6 (Numerical Methods)

723 (Computer Software, Data Handling & Applications); 921 (Applied Mathematics); 922 (Statistical Methods)

72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

13/5/4 (Item 4 from file: 8)  
DIALOG(R)File 8:Ei Compendex(R)  
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06201050 E.I. No: EIP02467203920

**Title: Empirical study of partial decoding for fast browsing of MPEG-2 compressed videos**

Author: Jiang, J.; Xia, J.; Hou, C.H.

Corporate Source: University of Bradford, Bradford, United Kingdom

Conference Title: Real-Time Imaging VI

Conference Location: San Jose, CA, United States Conference Date: 20020123-20020124

Sponsor: IS and T; SPIE

E.I. Conference No.: 60155

Source: Proceedings of SPIE - The International Society for Optical Engineering v 4666 2002. p 1-9

Publication Year: 2002

CODEN: PSISDG ISSN: 0277-786X

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 0211W4

Abstract: Following a series of successful launch of MPEG standards on **video compression**, their applications reveal ever increasing needs for their content access without full decompression or in their compressed format. To this end, we further investigated a number of partial decoding schemes to address the issue of efficient **content** access to **compressed video** streams. By controlling the number of DCT coefficients involved in the inverse DCT, a number of partial decoding schemes can be designed featuring fast processing speed and **low computing** cost. By controlling the **size** of video frames, visually perceptual **quality** can be adjusted to suit various application including thumbnail image browsing, low resolution image processing, head tracking, skin detection, face recognition, and object segmentation etc. where full resolution frames are often not necessarily required. While achieving improved computing cost and processing speed, our work also features in: (i) reasonably good image quality for content browsing; (ii) compatibility with original MPEG-2 bit streams; and (iii) enormous potential for further application of MPEG-2 in video content management, content-based **video** frame retrieval, **compressed video** editing, and low bit-rate video communication such as those involving mobile phones and telephone networks etc. In addition, extensive experiments were carried out and reported to support our design. 10 Refs.

Descriptors: **Image compression**; Decoding; **Content** based retrieval; Image quality; Cosine transforms; Image enhancement; Algorithms; Image communication systems; Standards

Identifiers: Partial decoding; Moving **Pictures** Experts Group;

**Compressed video content** access

Classification Codes:

723.2 (Data Processing); 921.3 (Mathematical Transformations); 723.1 (Computer Programming); 716.4 (Television Systems & Equipment); 902.2 (Codes & Standards)

723 (Computer Software, Data Handling & Applications); 921 (Applied Mathematics); 716 (Electronic Equipment, Radar, Radio & Television); 902 (Engineering Graphics; Engineering Standards; Patents)

72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS); 71 (ELECTRONICS & COMMUNICATION ENGINEERING); 90 (ENGINEERING, GENERAL)

13/5/5 (Item 5 from file: 8)  
DIALOG(R)File 8:Ei Compendex(R)  
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05939865 E.I. No: EIP01466727820

**Title: Measurement of visual impairment scales for digital video**

Author: Watson, A.B.; Kreslake, L.

Corporate Source: NASA Ames Research Center, Moffett Field, CA

94035-1000, United States

Conference Title: Human Vision and Electronic Imaging VI

Conference Location: San Jose, CA, United States Conference Date:  
20010122-20010125

Sponsor: SPIE

E.I. Conference No.: 58669

Source: Proceedings of SPIE - The International Society for Optical  
Engineering v 4299 2001. p 79-89

Publication Year: 2001

CODEN: PSISDG ISSN: 0277-786X

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X;  
(Experimental)

Journal Announcement: 0111W4

Abstract: A method for estimating subjective visual impairment of digital  
video in terms of a scale of perceived impairment measured in units of  
just-noticeable-difference (JND) was presented. The efficient adaptive  
scale estimation method was found to be reliable for measurement of  
impairment scales and JNDs for processed video sequences. The use of JND  
measurements for creation of calibrated artifact samples and testing and  
calibration of video quality models was demonstrated. (Edited abstract) 11  
Refs.

Descriptors: Image **quality** ; Video signal processing; Vision; Image  
**compression** ; **Maximum likelihood estimation** ; Mathematical models

Identifiers: Visual impairment

Classification Codes:

716.4 (Television Systems & Equipment); 741.2 (Vision)

741 (Light, Optics & Optical Devices); 716 (Electronic Equipment,  
Radar, Radio & Television); 922 (Statistical Methods); 921 (Applied  
Mathematics)

74 (LIGHT & OPTICAL TECHNOLOGY); 71 (ELECTRONICS & COMMUNICATION  
ENGINEERING); 92 (ENGINEERING MATHEMATICS)

**13/5/6 (Item 6 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

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05896697 E.I. No: EIP01406668792

**Title: Maximum-likelihood parameter estimation for image ringing-artifact  
removal**

Author: Yang, S.; Hu, Y.-H.; Nguyen, T.Q.; Tull, D.L.

Corporate Source: Dept. of Electrical and Comp. Eng. University of  
Wisconsin-Madison, Madison, WI 53706, United States

Source: IEEE Transactions on Circuits and Systems for Video Technology v  
11 n 8 August 2001. p 963-973

Publication Year: 2001

CODEN: ITCTEM ISSN: 1051-8215

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); T;  
(Theoretical); X; (Experimental)

Journal Announcement: 0110W1

Abstract: At low bit rates, **image compression** codecs based on  
overlapping transforms introduce spurious oscillations known as ringing  
artifacts in the vicinity of major edges. Unlike previous works, we  
present a maximum-likelihood approach to the ringing-artifact removal  
problem. Our approach employs a parameter-estimation method based on the  
k-means algorithm with the number of clusters determined by a  
cluster-separation measure. The proposed algorithm and its simplified  
approximation are applied to JPEG2000 **compressed images**. Our results  
show effective and efficient removal of ringing artifacts. 23 Refs.

Descriptors: **Image compression** ; Parameter **estimation** ; **Maximum  
likelihood estimation** ; Algorithms; Approximation theory; Image **quality** ;  
Mathematical models

Identifiers: Image ringing-artifact removal; K-means algorithm; Joint  
Photographic Experts Group; Cluster-separation measure; Hierarchical  
clustering algorithm

Classification Codes:

741.1 (Light & Optics); 921.6 (Numerical Methods)  
741 (Light, Optics & Optical Devices); 922 (Statistical Methods); 921  
(Applied Mathematics)  
74 (LIGHT & OPTICAL TECHNOLOGY); 92 (ENGINEERING MATHEMATICS)

13/5/7 (Item 7 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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05878529 E.I. No: EIP01346627866

**Title: Foveated video compression with optimal rate control**

Author: Lee, S.; Pattichis, M.S.; Bovik, A.C.

Corporate Source: Bell Laboratories Lucent Technologies, Murray Hill, NJ  
07974, United States

Source: IEEE Transactions on Image Processing v 10 n 7 July 2001. p  
977-992

Publication Year: 2001

CODEN: IIPRE4 ISSN: 1057-7149

Language: English

Document Type: JA; (Journal Article) Treatment: T; (Theoretical)

Journal Announcement: 0108W4

Abstract: Recently, foveated video compression algorithms have been proposed which, in certain applications, deliver high-quality video at reduced bit rates by seeking to match the nonuniform sampling of the human retina. We describe such a framework here where foveated video is created by a nonuniform filtering scheme that increases the compressibility of the video stream. We maximize a new foveal visual quality metric, the foveal signal-to-noise ratio (FSNR) to determine the best compression and rate control parameters for a given target bit rate. Specifically, we establish a new optimal rate control algorithm for maximizing the FSNR using a Lagrange multiplier method defined on a curvilinear coordinate system. For optimal rate control, we also develop a piecewise R-D (rate-distortion)/R-Q (rate-quantization) model. A fast algorithm for searching for an optimal Lagrange multiplier  $\lambda^*$  is subsequently presented. For the new models, we show how the reconstructed video quality is affected, where the FSNR is maximized, and demonstrate the coding performance for H.263, +, ++/MPEG-4 video coding. For H.263/MPEG video coding, a suboptimal rate control algorithm is developed for fast, high-performance applications. In the simulations, we compare the reconstructed pictures obtained using optimal rate control methods for foveated and normal video. We show that foveated video coding using the suboptimal rate control algorithm delivers excellent performance under 64 kb/s. 30 Refs.

Descriptors: Image compression; Algorithms; Image quality; Signal filtering and prediction; Signal to noise ratio; Bit error rate; Lagrange multipliers; Piecewise linear techniques; Image reconstruction; Image coding; Computer simulation; Digital devices

Identifiers: Foveated video compression; Optimal rate control; Human retina; Foveal signal to noise ratio; Curvi-linear coordinate system

Classification Codes:

723.2 (Data Processing); 921.6 (Numerical Methods); 741.1 (Light & Optics); 716.1 (Information & Communication Theory); 723.1 (Computer Programming); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory)

723 (Computer Software, Data Handling & Applications); 921 (Applied Mathematics); 741 (Light, Optics & Optical Devices); 716 (Electronic Equipment, Radar, Radio & Television)

72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS); 74 (LIGHT & OPTICAL TECHNOLOGY); 71 (ELECTRONICS & COMMUNICATION ENGINEERING)

13/5/8 (Item 8 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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05663776 E.I. No: EIP00095339162

**Title: Soft computing and hyperspectral video for background extraction**

Author: Jannson, Tomasz; Shnitser, Paul; Sandomirsky, Sergey;  
Kostrzewski, Andrew; Ro, Sookwang  
Corporate Source: Physical Optics Corp, Torrance, CA, USA  
Conference Title: Target and Backgrounds VI: Characterization,  
Visualization, and the Detection Process  
Conference Location: Orlando, FL, USA Conference Date:  
19000424-19000426  
Sponsor: SPIE  
E.I. Conference No.: 57307  
Source: Proceedings of SPIE - The International Society for Optical  
Engineering v 4029 2000. Society of Photo-Optical Instrumentation  
Engineers, Bellingham, WA, USA. p 347-355  
Publication Year: 2000  
CODEN: PSISDG ISSN: 0277-786X  
Language: English  
Document Type: CA; (Conference Article) Treatment: T; (Theoretical)  
Journal Announcement: 0011W2

Abstract: This paper presents experimental results of hyperspectral  
**image compression** by means of soft computing. Compression and  
transmission of hyperspectral data requires intensive computation and  
sophisticated processing that have been incompatible with on-board  
real-time operation. Soft computing with intelligent processing optimizes  
the compression parameters of MPEG 1, tuning them to the specific video  
content to deliver the **highest hyperspectral video compression  
quality**. This soft **computing** approach is compared with compression based  
on wavelet transform. (Author abstract) 1 Refs.

Descriptors: Feature extraction; **Image compression**; Real time systems  
; **Image** analysis; Image quality; Wavelet transforms

Identifiers: Hyperspectral imaging; Soft computing

Classification Codes:

741.1 (Light/Optics); 723.2 (Data Processing); 722.4 (Digital  
Computers & Systems); 921.3 (Mathematical Transformations)

741 (Optics & Optical Devices); 723 (Computer Software); 722 (Computer  
Hardware); 921 (Applied Mathematics)

74 (OPTICAL TECHNOLOGY); 72 (COMPUTERS & DATA PROCESSING); 92  
(ENGINEERING MATHEMATICS)

13/5/9 (Item 9 from file: 8)  
DIALOG(R) File 8: Ei Compendex(R)  
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05382936 E.I. No: EIP99104832661

Title: **Extending the phase gradient autofocus algorithm for low-altitude  
stripmap mode SAR**

Author: Thompson, Douglas G.; Bates, James S.; Arnold, David V.

Corporate Source: Brigham Young Univ, Provo, UT, USA

Conference Title: Proceedings of the 1999 11th IEEE/AESS Radar Conference  
-Radar Into the Next Millennium

Conference Location: Waltham, MA, USA Conference Date:  
19990420-19990422

Sponsor: IEEE Boston Section; IEEE Aerospace and Electrical Systems  
Society

E.I. Conference No.: 55366

Source: IEEE National Radar Conference - Proceedings 1999. p 36-40

Publication Year: 1999

CODEN: RINRFQ

Language: English

Document Type: JA; (Journal Article) Treatment: T; (Theoretical)

Journal Announcement: 9911W3

Abstract: The Phase Gradient Autofocus (PGA) algorithm has been widely  
used in Spotlight Synthetic Aperture Radar (SAR) to remove motion-induced  
blurs in the images. The PGA algorithm has been proven to be a superior  
autofocus method. This algorithm is extended for application to  
low-altitude stripmap mode SAR. PGA assumes a narrow beam, which is valid  
for most SAR systems. However, lower altitude SARs have large range  
dependencies that cannot be ignored. A new phase estimator for PGA is  
introduced and extended to allow range dependence. Three SAR images with



different characteristics are used in simulations comparing the new estimator to the widely used maximum likelihood approach and in demonstrating the range-dependent PGA algorithm. The PGA algorithm is also extended to stripmap mode SAR **data** through a new **compression** method. (Author abstract) 7 Refs.

Descriptors: Synthetic aperture radar; Algorithms; Radar imaging; Image **quality**; Computer simulation; **Image compression**; **Maximum likelihood estimation**; Radar systems

Identifiers: Phase gradient autofocus algorithm; Motion induced blurs; Stripmap mode; Phase estimator

Classification Codes:

716.2 (Radar Systems & Equipment); 723.5 (Computer Applications); 723.2 (Data Processing); 922.2 (Mathematical Statistics)  
716 (Radar, Radio & TV Electronic Equipment); 723 (Computer Software); 922 (Statistical Methods)  
71 (ELECTRONICS & COMMUNICATIONS); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

13/5/10 (Item 10 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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04454308 E.I. No: EIP95052693537

**Title: Psychophysical evaluation of the effect of JPEG, full-frame DCT and wavelet image compression on signal detection in medical image noise**

Author: Eckstein, Miguel P.; Morioka, Craig A.; Whiting, James S.; Eigler, Neal

Corporate Source: Cedars-Sinai Medical Cent. and Univ. of California/Los Angeles, Los Angeles, CA, USA

Conference Title: Medical Imaging 1995: Image Perception

Conference Location: San Diego, CA, USA

Sponsor: SPIE - Int Soc for Opt Engineering, Bellingham, WA USA

E.I. Conference No.: 22244

Source: Proceedings of SPIE - The International Society for Optical Engineering v 2436 1995. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA. p 79-89

Publication Year: 1995

CODEN: PSISDG ISSN: 0277-786X ISBN: 0-8194-1784-X

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 9609W3

Abstract: Image quality associated with **image compression** has been either arbitrarily evaluated through visual inspection, loosely defined in terms of some subjective criteria such as image sharpness or blockiness, or measured by arbitrary measures such as the mean square error between the uncompressed and **compressed image**. The present paper psychophysically evaluated the effect of three different **compression** algorithms (**JPEG**, full-frame, and wavelet) on human visual detection of computer-simulated low-contrast lesions embedded in real medical image noise from patient coronary angiogram. Performance identifying the signal present location as measure by d prime index of detectability decreased for all three algorithms by approximately 30% and 62% for the 16:1 and 30:1 compression ratios respectively. We evaluated the ability of two previously proposed measures of image quality, mean square error (MSE) and normalized nearest neighbor difference (NNND), to **determine the best compression** algorithm. The MSE predicted significantly higher image **quality** for the JPEG algorithm in the 16:1 compression ratio and for both JPEG and full-frame for the 30:1 compression ratio. The NNND predicted significantly high image quality for the full-frame algorithm for both compression ratios. These findings suggest that these two measures of image quality may lead to erroneous conclusions in evaluations and/or optimizations if **image compression** algorithms. 27 Refs.

Descriptors: Medical imaging; Spurious signal noise; **Image compression**; Psychophysiology; Mathematical transformations; Evaluation; Signal detection; Image quality; Inspection; Visualization

Identifiers: JPEG; Discrete cosine transform; Wavelet images

Classification Codes:

913.3.1 (Inspection)  
461.6 (Medicine); 741.1 (Light/Optics); 921.3 (Mathematical Transformations); 913.3 (Quality Assurance & Control); 723.1 (Computer Programming); 741.2 (Vision)  
461 (Biotechnology); 741 (Optics & Optical Devices); 921 (Applied Mathematics); 913 (Production Planning & Control); 723 (Computer Software)  
46 (BIOENGINEERING); 74 (OPTICAL TECHNOLOGY); 92 (ENGINEERING MATHEMATICS); 91 (ENGINEERING MANAGEMENT); 72 (COMPUTERS & DATA PROCESSING)

13/5/11 (Item 11 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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04319524 E.I. No: EIP95082824330

**Title:** Very low bit rate data compression using a quality measure based on target detection performance

**Author:** Nahm, Jin W.; Smith, Mark J.

**Corporate Source:** Georgia Inst. of Technology, Atlanta, GA, USA

**Conference Title:** Signal Processing, Sensor Fusion, and Target Recognition IV

**Conference Location:** Orlando, FL, USA **Conference Date:** 19950417-19950419

**Sponsor:** SPIE - Int Soc for Opt Engineering, Bellingham, WA USA

**E.I. Conference No.:** 22322

**Source:** Proceedings of SPIE - The International Society for Optical Engineering v 2484 1995. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA. p 246-255

**Publication Year:** 1995

**CODEN:** PSISDG **ISSN:** 0277-786X **ISBN:** 0-8194-1837-4

**Language:** English

**Document Type:** CA; (Conference Article) **Treatment:** T; (Theoretical); A; (Applications)

**Journal Announcement:** 9602W4

**Abstract:** **Compression** of sensor **data** is important for transmission and storage of digital infrared and SAR images. For speed and economy, one would like to achieve the highest compression ratios possible while preserving the critical information in the images, i.e., target **information**. Conventional **compression** methods such as **JPEG**, subband coding, fractal coding methods, and the like are tailored to optimizing the reconstructed output to achieve the most subjectively pleasing images possible. Their goal is to make the reconstructed images look as close to the original as possible. In the defense industry ATR paradigm, this is not the relevant optimality criterion. Rather it is preservation of target detection and recognition performance, a concept which is somewhat new in the compression community. In this paper we report on a compression strategy based on subband coding and vector quantization that can achieve compression ratios in excess of 250 to 1, while maintaining high levels of detection/recognition accuracy. 12 Refs.

**Descriptors:** **Data compression**; Sensors; Pattern recognition; Military applications; Performance; Vector quantization

**Identifiers:** Very low bit rate data; Target detection; Recognition performance; Subband coding; Compression ratios

Classification Codes:

723.2 (Data Processing); 404.1 (Military Engineering); 921.1 (Algebra)  
723 (Computer Software); 741 (Optics & Optical Devices); 404 (Military Engineering); 921 (Applied Mathematics)  
72 (COMPUTERS & DATA PROCESSING); 74 (OPTICAL TECHNOLOGY); 92 (ENGINEERING MATHEMATICS)

13/5/12 (Item 12 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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04180042 E.I. No: EIP95022570227

**Title: Fractal-based hybrid compression schemes**

Author: Ratnakar, Viresh; Feig, Ephraim; Tiwari, Prasoon

Corporate Source: Univ. of Wisconsin/Madison, Madison, WI, USA

Conference Title: Visual Communications and Image Processing '94

Conference Location: Chicago, IL, USA Conference Date: 19940925-19940929

Sponsor: SPIE - Int Soc for Opt Engineering, Bellingham, WA USA; IEEE Circuits and Systems Soc.; European Assoc. for Signal Processing (EURASIP); Optical Soc. of America (OSA)

E.I. Conference No.: 22058

Source: Proceedings of SPIE - The International Society for Optical Engineering v 2308 n p 1 1994. p 448-454

Publication Year: 1994

CODEN: PSISDG ISSN: 0277-786X ISBN: 0-8194-1638-X

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical); X; (Experimental)

Journal Announcement: 9508W1

Abstract: Fractal compression has not lived up to its promise as a high-quality low bit-rate image compression scheme. The existing algorithms for finding self-mapping contractive transforms for images are computationally expensive and offer a poor rate-quality tradeoff. In this paper we explore the error images resulting from a simple fractal compression scheme. We use a set of fractal maps as a predictor for the image, and store the error-image using the Discrete Cosine Transform (DCT). Our experiments show that such a composite scheme has worse rate-quality tradeoff than DCT alone. 6 Refs.

Descriptors: Image compression ; Fractals; Image quality; Mathematical transformations

Identifiers: Fractal compression ; Discrete cosine transforms; Video compression

Classification Codes:

741.3 (Optical Devices & Systems); 723.5 (Computer Applications); 921.3 (Mathematical Transformations)

741 (Optics & Optical Devices); 723 (Computer Software); 921 (Applied Mathematics)

74 (OPTICAL TECHNOLOGY); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

13/5/13 (Item 13 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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02955333 E.I. Monthly No: EI9009111734

**Title: Tree-structured scene adaptive coder.**

Author: Strobach, Peter

Corporate Source: Siemens AG, Muenchen, West Ger

Source: IEEE Transactions on Communications v 38 n 4 Apr 1990 p 477-486

Publication Year: 1990

CODEN: IECMBT ISSN: 0096-1965

Language: English

Document Type: JA; (Journal Article) Treatment: T; (Theoretical); X; (Experimental); L; (Literature Review/Bibliography)

Journal Announcement: 9009

Abstract: A new type of scene adaptive coder has been developed. It involves a quadtree mean decomposition of the motion-compensated frame-to-frame difference signal followed by a scalar quantization of the local means. As a fundamental property, the new coding algorithm treats the displacement estimation problem and the quadtree construction problem as a unit. The displacement vector and the related quadtree are jointly optimized in order to minimize the direct frame-to-frame update information rate (in bits), which turns up as a new and more adequate cost function in displacement estimation. This guarantees the highest possible data compression ratio at a given quality threshold. Excellent results have been obtained for coding of color image sequences at a rate of 64 kb/s. The quadtree concept entails a much lower computational complexity compared to

the conventional motion-compensated transform coder while achieving a subjective image quality that is as good or better than that of the traditional transform-based counterpart. 31 Refs.

Descriptors: TELEVISION; SIGNAL PROCESSING--Signal Encoding; DIGITAL COMMUNICATION SYSTEMS; INFORMATION THEORY-- **Data Compression** ; **IMAGE PROCESSING--Image Coding**; PULSE CODE MODULATION

Identifiers: SCENE ADAPTIVE CODER; MOTION ESTIMATION; MOTION-COMPENSATED TRANSFORM CODER; DIFFERENCE PCM; QSDPCM ALGORITHM

Classification Codes:

716 (Radar, Radio & TV Electronic Equipment); 731 (Automatic Control Principles); 723 (Computer Software); 741 (Optics & Optical Devices)

71 (ELECTRONICS & COMMUNICATIONS); 73 (CONTROL ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 74 (OPTICAL TECHNOLOGY)

13/5/14 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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7086834 INSPEC Abstract Number: B2001-12-6135C-087, C2001-12-5260D-047

**Title: Hardware-oriented region based algorithm for low power motion estimation**

Author(s): Fermo, A.; Sicuranza, G.L.; Pahor, V.

Author Affiliation: Dipartimento di Elettrotecnica Elettronica ed Inf., Trieste Univ., Italy

Conference Title: ISPA 2001. Proceedings of the 2nd International Symposium on Image and Signal Processing and Analysis. In conjunction with 23rd International Conference on Information Technology Interfaces (IEEE Cat. No.01EX480) p.283-8

Editor(s): Loncaric, S.; Babic, H.

Publisher: Univ. Zagreb, Zagreb, Croatia

Publication Date: 2001 Country of Publication: Croatia xii+665 pp.

ISBN: 953 96769 4 0 Material Identity Number: XX-2001-01475

Conference Title: ISPA 2001. Proceedings of the 2nd International Symposium on Image and Signal Processing and Analysis

Conference Sponsor: IEEE Region 8; EURASIP

Conference Date: 19-21 June 2001 Conference Location: Pula, Croatia

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: Motion **estimation** is a fundamental step for high quality, **low bandwidth video compression**. Recently, the MPEG-4 group has proposed some low complexity algorithms. They have the same performance in term of PSNR as the full search algorithm, but at the same time the complexity is dramatically reduced. However it is difficult to realize these algorithms with conventional hardware structures. Here we present another algorithm with similar performance, but that is realizable with a simpler hardware structure. (9 Refs)

Subfile: B C

Descriptors: computational complexity; **data compression** ; motion estimation; video coding

Identifiers: hardware-oriented region based algorithm; low power motion estimation; high-quality low-bandwidth **video compression** ; MPEG-4 group; low complexity algorithms; PSNR; full search algorithm

Class Codes: B6135C (Image and video coding); C5260D (Video signal processing)

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13/5/15 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

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6983006 INSPEC Abstract Number: B2001-08-6135C-090, C2001-08-5260D-043

**Title: Foveated video compression with optimal rate control**

Author(s): Sanghoon Lee; Pattichis, M.S.; Bovik, A.C.

Author Affiliation: Lucent Technol. Bell Labs., Murray Hill, NJ, USA

Journal: IEEE Transactions on Image Processing vol.10, no.7 p. 977-92

Publisher: IEEE,  
Publication Date: July 2001 Country of Publication: USA  
CODEN: IIPRE4 ISSN: 1057-7149  
SICI: 1057-7149(200107)10:7L:977:FVCW;1-H  
Material Identity Number: 0939-2001-007  
U.S. Copyright Clearance Center Code: 1057-7149/2001/\$10.00  
Document Number: S1057-7149(01)05446-X  
Language: English Document Type: Journal Paper (JP)  
Treatment: Theoretical (T)

Abstract: Previously, foveated **video compression** algorithms have been proposed which, in certain applications, deliver high-quality video at reduced bit rates by seeking to match the nonuniform sampling of the human retina. We describe such a framework here where foveated video is created by a nonuniform filtering scheme that increases the **compressibility** of the **video** stream. We maximize a new foveal visual **quality** metric, the foveal signal-to-noise ratio (FSNR) to **determine** the **best compression** and rate control parameters for a given target bit rate. Specifically, we establish a new optimal rate control algorithm for maximizing the FSNR using a Lagrange multiplier method defined on a curvilinear coordinate system. For optimal rate control, we also develop a piecewise R-D (rate-distortion)/R-Q (rate-quantization) model. A fast algorithm for searching for an optimal Lagrange multiplier  $\lambda^*$  is subsequently presented. For the new models, we show how the reconstructed video quality is affected, where the FSNR is maximized, and demonstrate the coding performance for H.263,+,++/MPEG-4 video coding. For H.263/MPEG video coding, a suboptimal rate control algorithm is developed for fast, high-performance applications. In the simulations, we compare the reconstructed pictures obtained using optimal rate control methods for foveated and normal video. We show that foveated video coding using the suboptimal rate control algorithm delivers excellent performance under 64 kb/s. (20 Refs)

Subfile: B C

Descriptors: **data compression**; low-pass filters; rate distortion theory; variable rate codes; video coding

Identifiers: foveated **video compression**; optimal rate control; nonuniform sampling; nonuniform filtering scheme; compressibility; video stream; foveal visual quality metric; foveal signal-to-noise ratio; FSNR; Lagrange multiplier method; curvilinear coordinate system; piecewise rate-distortion/rate-quantization model; search; optimal Lagrange multiplier; video quality; H.263; MPEG-4 video coding; H.263/MPEG video coding; suboptimal rate control algorithm

Class Codes: B6135C (Image and video coding); B6140B (Filtering methods in signal processing); C5260D (Video signal processing)

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13/5/16 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

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5201939 INSPEC Abstract Number: B9604-6430-007, C9604-7410F-063

**Title: Influence of the bus architecture on the picture quality in nonlinear editing systems**

Author(s): Schmidt, U.

Author Affiliation: Miro Comput. Products AG, Brunswick, Germany

Journal: Fernseh- und Kino-Technik vol.49, no.12 p.735-7

Publisher: Huthig,

Publication Date: Dec. 1995 Country of Publication: West Germany

CODEN: FNKTAH ISSN: 0015-0142

SICI: 0015-0142(199512)49:12L:735:IAPQ;1-C

Material Identity Number: F033-96001

Language: German Document Type: Journal Paper (JP)

Treatment: Applications (A)

Abstract: Nonlinear editing systems use hard discs for storage of **compressed image data**. The **data** transmission rate between codec and hard disc **determines** the **minimum compression** factor and hence the best achievable picture **quality**. This contribution investigates the influence of ISA and PCI bus architectures on the data rate in systems with

18/5/2 (Item 2 from file: 8)

DIALOG(R)File 8:EI Compendex(R)

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05960296 E.I. No: EIP01526773083

**Title: An alternative complexity model for the MPEG-4 video verifier mechanism**

Author: Valentim, J.; Nunes, P.; Pereira, F.

Corporate Source: Instituto Superior Tecnico (IS) Instituto de Telecomunicacoes, 1049-001 Lisboa, Portugal

Conference Title: IEEE International Conference on Image Processing (ICIP) 2001

Conference Location: Thessaloniki, Greece Conference Date: 20011007-20011010

Sponsor: IEEE

E.I. Conference No.: 58800

Source: IEEE International Conference on Image Processing v 1 2001. p 461-464 (IEEE cat n 01CH37205)

Publication Year: 2001

CODEN: 85QTAW

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0112W5

Abstract: MPEG-4 is the first object-based audiovisual coding standard. To control the minimum decoding **complexity** resources required at the decoder, the MPEG-4 Visual standard defines the so-called **Video Complexity Verifier (VCV)**. This paper proposes an alternative VCV model, based on a set of relative macroblock (MB) **complexity weights assigned** to the various MB coding types used in MPEG-4 **video** coding. The New VCV model allows a more efficient use of the available decoding resources by preventing the over-evaluation of the decoding complexity of certain MB types and thus making possible to encode scenes (for the same profile@level decoding resources) which otherwise would be considered too requiring. 4 Refs.

Descriptors: **Video** signal processing; **Image compression**; **Image** coding; Computational complexity; Data structures; Decoding; Object recognition; Visualization

Identifiers: Video complexity verifier; Motion picture experts group; Audiovisual coding standard; Decoding complexity; Macroblock complexity

Classification Codes:

716.4 (Television Systems & Equipment); 723.2 (Data Processing); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory)); 723.5 (Computer Applications)

716 (Electronic Equipment, Radar, Radio & Television); 723 (Computer Software, Data Handling & Applications); 721 (Computer Circuits & Logic Elements)

71 (ELECTRONICS & COMMUNICATION ENGINEERING); 72 (COMPUTERS & DATA PROCESSING)

18/5/6 (Item 6 from file: 8)

DIALOG(R)File 8:EI Compendex(R)

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04306508 E.I. No: EIP95122954544

**Title: Low-power video decoder with power, memory, bandwidth and quality scalability**

Author: Chaddha, Navin; Meng, Teresa H.Y.

Corporate Source: Stanford Univ, Stanford, CA, USA

Conference Title: Proceedings of the 1995 IEEE Workshop on VLSI Signal Processing

Conference Location: Osaka, Jpn Conference Date: 19951016-19951018

E.I. Conference No.: 44054

Source: IEEE Workshop on VLSI Signal Processing, Proceedings 1995. IEEE, Piscataway, NJ, USA. p 451-460

Publication Year: 1995

CODEN: 85PYA8

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 9602W2

Abstract: This paper describes a low-power scalable **video** decoder for use in portable **video** applications. The scalable **video** decoder uses tree structured vector quantization (TSVQ) of perceptually **weighted** block transforms. The subjective quality of **compressed images** improves significantly by the use of perceptual distortion **measures**. The low-**complexity**, low-power architecture requires only table-lookups to perform video decompression. Inverse transforms are performed as pre-processing steps in the tables. Color conversion from YUV to RGB and color quantization are also performed as pre-processing steps in the tables. The video decoder provides a trade-off between rate-distortion, power and memory size. This allows to trade-off power and memory size for better quality of **compressed video** and vice-versa. The power consumption of our video decoder is orders of magnitude smaller than other decoders in existing technology. Measured performance shows that the scalable video decoder consumes between 50 to 150 micro-watt with a 1.5 V power supply in 0.8 mu CMOS technology for 160 multiplied by 240 resolution video at 30 frames per second. (Author abstract) 7 Refs.

Descriptors: Video signal processing; Decoding; **Image** quality; **Image compression**; Vector quantization; Color **image** processing; Mathematical transformations; Trees (mathematics); Bandwidth; Storage allocation (computer)

Identifiers: Video decoder; Tree structured vector quantization; Perceptually weighted block transforms; Color quantization

Classification Codes:

711.2 (Electromagnetic Waves in Relation to Various Structures); 723.2 (Data Processing); 921.1 (Algebra); 921.3 (Mathematical Transformations); 722.1 (Data Storage, Equipment & Techniques)

711 (Electromagnetic Waves); 741 (Optics & Optical Devices); 723 (Computer Software); 921 (Applied Mathematics); 722 (Computer Hardware)

71 (ELECTRONICS & COMMUNICATIONS); 74 (OPTICAL TECHNOLOGY); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

18/5/8 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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7895481 INSPEC Abstract Number: B2004-04-6135C-150, C2004-04-5260B-439

Title: **Visual quality measure of the compressed images**

Author(s): Tamtaoui, A.; Aboutajdine, D.

Author Affiliation: INPT, Rabat, Malta

Journal: Traitement du Signal vol.20, no.1 p.43-53

Publisher: GRETSI,

Publication Date: 2003 Country of Publication: France

CODEN: TRSIE6 ISSN: 0765-0019

SICI: 0765-0019(2003)20:1L:43:VQMC;1-A

Material Identity Number: H686-2003-002

Language: French Document Type: Journal Paper (JP)

Treatment: Theoretical (T); Experimental (X)

Abstract: This article presents a visual quality **measure** of the **compressed monochrome image**. This **measure** uses a reference **image**. The originality of this **measure** is based on the **weighting** of the standard **measures** by a local error **density**, **calculated** on the windows overlapping the **image**. The local error computation is based on the contrast, the structure and the quantification criteria. Actually, this method is compared with standard PSNR (Peak Signal to Noise Ratio) and MAE (Mean of Absolute Error) measures, weighted by the simplified Daly model [S. Daly (1987)], and Franti [P. Franti (1998)] methods. The results of our measure are reliable, compared with the methods mentioned above. The results are then evaluated in terms of the correlation measure with the Mean Opinion Score (MOS). (32 Refs)

Subfile: B C

Descriptors: correlation methods; image coding

Identifiers: visual quality measure; **compressed monochrome image**; reference image; local error density; quantification criteria; peak signal

to noise ratio; PSNR; mean of absolute error; Daly model; Franti method; correlation measure; mean opinion score; MOS; objective quality; distortion measure; standard measure weighting; window overlapping

Class Codes: B6135C (Image and video coding); C5260B (Computer vision and image processing techniques)

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18/5/17 (Item 1 from file: 144)

DIALOG(R) File 144:Pascal

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15998323 PASCAL No.: 03-0143513

**The complexity of compressing subsegments of images described by finite automata**

KARHUMAEMI Juhani; PLANDOWSKI Wojciech; RYTTER Wojciech

Department of Mathematics, Finland and Turku Centre for Computer Science, Turku University, DataCity 4th floor, Turku 20014, Finland; Department of Mathematics, Turku University, Finland and Turku Centre for Computer Science, Finland; Instytut Informatyki, Uniwersytet Warszawski Banacha 2, 02-097 Warszawa, Poland; Department of Computer Science, University of Liverpool, Chadwick Building Peach Street, L69 7ZF Liverpool, United Kingdom

Journal: Discrete applied mathematics, 2003, 125 (2-3) 235-254

ISSN: 0166-218X CODEN: DAMADU Availability: INIST-18287;

354000106994040040

No. of Refs.: 12 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: Netherlands

Language: English

We investigate how the compression size of the compressed version of a two-dimensional image changes when we cut off a part of it, e.g. extract a photo of one person from a photo of a group of people, when compression is considered in terms of finite automata. Denote by  $c(T)$  the compression size of a square image  $T$  in terms of deterministic automata, it is the smallest size of a deterministic acyclic automaton  $A$  describing  $T$ . The corresponding alphabet of  $A$  has only four letters, corresponding to four quadrants. We consider an independent useful combinatorial interpretation of  $c(T)$  in terms of regular subsquares of  $T$ . Denote by  $\text{PSI}(n)$  the largest compression size  $c(R)$  of a square subsegment  $R$  of the image  $T$  such that  $c(T) = n$ . We show that there is a constant  $c > 0$  such that:  $cn \text{ SUP } 2 \text{ SUP } . \text{ SUP } 5 \leq \text{PSI}(n) \leq n \text{ SUP } 2 \text{ SUP } . \text{ SUP } 5$ . For weighted automata we show that the compression size grows only linearly, if  $T$  is described by a weighted automaton with  $n$  states and  $m$  edges then a subimage  $R$  can be described by a similar automaton having  $O(n)$  states and  $O(m)$  edges. We also show how to construct efficiently (in linear time w.r.t. the total size of the input and the produced output) the compressed representation of subsegments given the compressed representation of the whole image.

English Descriptors: **Image ; Data compression ; Image compr essio**

**n^Finite au ; Finite automaton; Complexity ; State; Edge; Linear time;**

**Input output; Input; Representation; Weight ; Compression; Size;**

**Deterministic automaton; Alphabet; Letter; Interpretation; Constant;**

**Acyclic automaton; Square image**

French Descriptors: **Image ; Compression donnee ; Compression image ;**

**Automate fini; Complexite; Etat; Bord; Temps lineaire; Entree sortie;**

**Entree ordinateur; Representation; Poids; Compression; Taille; Automate**

**deterministe; Alphabet; Lettre alphabet; Interpretation; Constante;**

**Automate acyclique; Image carree**



21/5/1 (Item 1 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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06743154 E.I. No: EIP04108045938

**Title: Wavelet-based pavement distress detection and evaluation**

Author: Zhou, Jian; Huang, Peisen S.; Chiang, Fu-Pen

Corporate Source: Department of Mechanical Engineering Stt. Univ. New York at Stony Brook, Stony Brook, NY 11794-2300, United States

Conference Title: Wavelets: Applications in Signal and Image Processing X

Conference Location: San Diego, CA, United States Conference Date: 20030804-20030808

Sponsor: SPIE

E.I. Conference No.: 62314

Source: Proceedings of SPIE - The International Society for Optical Engineering v 5207 n 2 2003. p 728-739

Publication Year: 2003

CODEN: PSISDG ISSN: 0277-786X

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0403W2

Abstract: A wavelet-based pavement distress detection and evaluation method is proposed. This method consists of two main parts, real-time processing for distress detection and offline processing for distress evaluation. The real-time processing part includes wavelet transform, distress detection and isolation, and **image compression** and noise reduction. When a pavement image is decomposed into different frequency subbands by wavelet transform, the distresses, which are usually irregular in shape, appear as high-amplitude wavelet coefficients in the high-frequency details subbands, while the background appears in the low-frequency approximation subband. Two statistical parameters, high-amplitude wavelet coefficient percentage (HAWCP) and **high-frequency energy** percentage (HFEP), are established and used as criteria for real-time distress detection and distress **image** isolation. For **compression** of isolated distress **images**, a modified EZW (Embedded Zerotrees of Wavelet coding) is developed, which can simultaneously **compress** the **images** and reduce the noise. The **compressed data** are saved to the hard drive for further analysis and evaluation. The offline processing includes distress classification, distress quantification, and reconstruction of the original image for distress segmentation, distress mapping, and maintenance decision-making. The **compressed data** are first loaded and decoded to obtain wavelet coefficients. Then Radon transform is then applied and the parameters related to the peaks in the Radon domain are used for distress classification. For distress quantification, a norm is defined that can be used as an index for evaluating the severity and extent of the distress. Compared to visual or manual inspection, the proposed method has the advantages of being objective, high-speed, safe, automated, and applicable to different types of pavements and distresses. 38 Refs.

Descriptors: Pavements; Highway systems; **Image compression**; Spurious signal noise; Frequencies; Image coding; Decision making; Wavelet transforms

Identifiers: Pavement image processing; Distress detection and isolation; Distress classification; Pavement surface evaluation; Distress segmentation  
Classification Codes:

406.1 (Highway Systems); 723.2 (Data Processing); 701.1 (Electricity, Basic Concepts & Phenomena); 711.1 (Electromagnetic Waves in Different Media); 912.2 (Management); 921.3 (Mathematical Transformations)

406 (Highway Engineering); 723 (Computer Software, Data Handling & Applications); 701 (Electricity & Magnetism); 711 (Electromagnetic Waves); 912 (Industrial Engineering & Management); 921 (Applied Mathematics)

40 (CIVIL ENGINEERING, GENERAL); 72 (COMPUTERS & DATA PROCESSING); 70 (ELECTRICAL ENGINEERING, GENERAL); 71 (ELECTRONICS & COMMUNICATION ENGINEERING); 91 (ENGINEERING MANAGEMENT); 92 (ENGINEERING MATHEMATICS)

21/5/2 (Item 2 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)  
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04806337 E.I. No: EIP97093803336

**Title: Analytical look at the effects of compression on medical images**  
Author: Persons, Kenneth; Palisson, Patrice; Manduca, Armando; Erickson, Bradley J.; Savcenko, Vladimir  
Corporate Source: Mayo Foundation, Rochester, MN, USA  
Source: Journal of Digital Imaging v 10 n 3 Suppl 1 Aug 1997. p 60-66  
Publication Year: 1997  
CODEN: JDIMEW ISSN: 0897-1889  
Language: English  
Document Type: JA; (Journal Article) Treatment: T; (Theoretical)  
Journal Announcement: 9710W4

Abstract: This article will take an analytical look at how lossy Joint Photographic Experts Group ( **JPEG** ) and wavelet **image compression** techniques affect medical **image** content. It begins with a brief explanation of how the JPEG and wavelet algorithms work, and describes in general terms what effect they can have on image quality (removal of noise, blurring, and artifacts). It then focuses more specifically on medical image diagnostic content and explains why subtle pathologies, that may be difficult for the human eye to discern because of low contrast, are generally very well preserved by these compression algorithms. By applying a wavelet decomposition to the whole image and to specific regions of interest (ROI), and by understanding how the lossy quantization step attenuates signals in those decomposition energy subbands, much can be learned about how tolerant various anatomical structures are to compression. High-frequency anatomical structures that have their energy represented by a few large coefficients (in the wavelet domain) will be well preserved, while, those structures with **high frequency energy** distributed over numerous smaller coefficients are the most vulnerable to **compression**. Digitized **films** showing subtle chest nodules, a subtle stress fracture, and CT and MR images are used to show these results.  
(Author abstract) 8 Refs.

Descriptors: Medical imaging; **Image compression**; Wavelet transforms; Adaptive algorithms; Image quality; Computerized tomography; Magnetic resonance imaging; Radiology; Image communication systems; Standards  
Identifiers: Wavelet compression; Teleradiology; Joint photographic experts group ( **JPEG** ) **compression**

Classification Codes:

461.1 (Biomedical Engineering); 723.2 (Data Processing); 921.3 (Mathematical Transformations); 723.5 (Computer Applications); 701.2 (Magnetism: Basic Concepts & Phenomena); 461.6 (Medicine)  
461 (Biotechnology); 723 (Computer Software); 921 (Applied Mathematics); 701 (Electricity & Magnetism)  
46 (BIOENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS); 70 (ELECTRICAL ENGINEERING)

21/5/3 (Item 1 from file: 35)

DIALOG(R) File 35: Dissertation Abs Online  
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01886474 ORDER NO: AADAA-I1408715

**Image compression using multiscale geometric edge models**

Author: Wakin, Michael Bruce  
Degree: M.S.  
Year: 2002  
Corporate Source/Institution: Rice University (0187)  
Chair: Richard G. Baraniuk  
Source: VOLUME 40/06 of MASTERS ABSTRACTS.  
PAGE 1594. 53 PAGES  
Descriptors: ENGINEERING, ELECTRONICS AND ELECTRICAL  
Descriptor Codes: 0544  
ISBN: 0-493-61484-2

Edges are of particular interest for **image compression**, as they communicate important information, contribute large amounts of **high** -

**frequency energy** , and can generally be described with few parameters. Many of today's most competitive coders rely on wavelets to transform and **compress** the **image** , but modeling the joint behavior of wavelet coefficients along an edge presents a distinct challenge. In this thesis, we examine techniques for exploiting the simple geometric structure which captures edge information. Using a multiscale wedgelet decomposition, we present methods for extracting and compressing a cartoon sketch containing the significant edge information, and we discuss practical issues associated with coding the residual textures. Extending these techniques, we propose a rate-distortion optimal framework (based on the Space-Frequency Quantization algorithm) using wedgelets to capture geometric information and wavelets to describe the rest. At low bitrates, this method yields **compressed images** with sharper edges and lower mean-square error.

21/5/4 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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6765336 INSPEC Abstract Number: A2001-01-8734-003, B2001-01-7520E-001

**Title: Effect of a single-channel wide dynamic range compression circuit on perception of stop consonant place of articulation**

Author(s): Hedrick, M.S.; Rice, T.

Author Affiliation: Tennessee Univ., Knoxville, TN, USA

Journal: Journal of Speech, Language, and Hearing Research vol.43, no.5 p.1174-84

Publisher: American Speech-Language-Hearing Assoc,

Publication Date: Oct. 2000 Country of Publication: USA

CODEN: JSLRFW ISSN: 1092-4388

SICI: 1092-4388(200010)43:5L.1174:ESCW;1-H

Material Identity Number: G224-2000-006

U.S. Copyright Clearance Center Code: 1092-4388/2000/4305-1174

Language: English Document Type: Journal Paper (JP)

Treatment: Experimental (X)

Abstract: Previous studies have shown that altering the amplitude of a consonant in a specific frequency region relative to an adjacent vowel's amplitude in the same frequency region will affect listeners' perception of the consonant place of articulation. Hearing aids with single-channel, fast-acting wide dynamic range compression (WDRC) alter the overall consonant-vowel (CV) intensity ratio by increasing consonant energy. Perhaps one reason WDRC has had limited success in improving speech recognition performance is that the natural amplitude balances between consonant and vowel are altered in crucial frequency regions, thus disturbing the aforementioned amplitude cue for determining place of articulation. The current study investigated the effect of a WDRC circuit on listeners' perception of place of articulation when the relative amplitude of consonant and vowel was manipulated. The stimuli were a continuum of synthetic CV syllables stripped of all place cues except relative consonant amplitudes. Acoustic analysis of the CVs before and after hearing aid processing showed a predictable increase in **high - frequency energy** , particularly for the burst of the consonant. Alveolar bursts had more **high - frequency energy** than labial bursts. Twenty-five listeners with normal hearing and 5 listeners with sensorineural hearing loss labeled the consonant sound of the CV syllables in unaided form and after the syllables were recorded through a hearing aid with single-channel WDRC. There were significantly more listeners who were unable to produce a category boundary when labeling the aided stimuli. Of those listeners who did yield a category boundary for both aided and unaided stimuli, there were significantly more alveolar responses for the aided condition. These results can be explained by the acoustic analyses of the aided stimuli. ( 21 Refs)

Subfile: A B

Descriptors: biomedical electronics; **data compression** ; hearing aids; speech recognition

Identifiers: hearing impairment; single-channel wide dynamic range compression circuit; articulation stop consonant place perception; overall consonant-vowel intensity ratio; consonant energy increase; synthetic CV

syllables continuum; amplitude cue; alveolar responses; consonant burst;  
category boundary; sensorineural hearing loss; normal hearing listeners;  
alveolar bursts; **high - frequency energy** ; labial bursts

Class Codes: A8734 (Audition); A8770J (Prosthetics and other practical applications); A8736 (Speech and biocommunications); B7520E (Prosthetics and orthotics); B6130E (Speech recognition and synthesis)

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21/5/5 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

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6307014 INSPEC Abstract Number: B1999-09-6135C-066, C1999-09-5260B-144

**Title: Image compression based on low-pass wavelet transform and multi-scale edge compensation. Part II: evidence and experiments**

Author(s): Xue, X.

Author Affiliation: Dept. of Comput. Sci., Harbin Inst. of Technol., China

Conference Title: Proceedings DCC'99 Data Compression Conference (Cat. No. PR00096) p.559

Editor(s): Storer, J.A.; Cohn, M.

Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA

Publication Date: 1999 Country of Publication: USA xv+566 pp.

ISBN: 0 7695 0096 X Material Identity Number: XX-1999-00874

U.S. Copyright Clearance Center Code: 1068-0314/99/\$10.00

Conference Title: Proceedings of Conference on Data Compression (DCC'99)

Conference Sponsor: IEEE Comput. Soc. Tech. Committee on Comput. Commun

Conference Date: 29-31 March 1999 Conference Location: Snowbird, UT, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Theoretical (T); Experimental (X)

Abstract: Summary form only given. The scalability and recognition ability of the edge detection of MSEC can be observed, in which two kinds of edges are handled separately, and, for each kind of edge, the detector responds to the exact scale only. For example, the apparent large-scale edges in the original image are kept undetected until an appropriate decomposition level is reached. Compensated images are considerably smoothed since fine details are systematically removed. Such smoothing is seriously different from the traditional smoothing method in both the idea inside and the effect outside. The low-pass wavelet transform works since the compensated image contains much less **high - frequency energy** . By the low-pass wavelet transform, the system is able to reach and process edges at the next larger scale. So, the encoder outputs multi-scale primal sketches, which are coded in a modeled way instead of pixel by pixel. The encoder also outputs the final smooth background, which can be readily coded by traditional methods. The decoder synthesizes the image according to the received information on the multi-scale primal sketch and the background. (0 Refs)

Subfile: B C

Descriptors: **data compression** ; decoding; edge detection; image coding ; image recognition; low-pass filters; smoothing methods; transform coding; wavelet transforms

Identifiers: **image compression** ; low-pass wavelet transform; multi-scale edge compensation; recognition; scalability; edge detection; decomposition level; smoothing; multi-scale primal sketches; image synthesis; decoder

Class Codes: B6135C (Image and video coding); B6135E (Image recognition); B0290X (Integral transforms in numerical analysis); C5260B (Computer vision and image processing techniques); C1250M (Image recognition); C4188 (Integral transforms in numerical analysis)

Copyright 1999, IEE

21/5/6 (Item 1 from file: 6)

DIALOG(R)File 6:NTIS

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1541869 NTIS Accession Number: NTN90-1064

**Mining Applications of Crosshole Seismic Systems**

(NTIS Tech Note)

Department of the Interior, Washington, DC.

Corp. Source Codes: 004199000

Dec 90 1p

Languages: English

Journal Announcement: GRAI9102

FOR ADDITIONAL INFORMATION: To discuss this effort further, contact Richard E. Thill, Twin Cities Research Center, U.S. Bureau of Mines, 5629 Minnehaha Avenue South, Minneapolis, MN 55417-3099; (612) 725-4580.

NTIS Prices: Not available NTIS

Country of Publication: United States

This citation summarizes a one-page announcement of technology available for utilization. Ground control for safe mining requires detection of geologic hazards and bad ground conditions in the immediate vicinity of the mine workings. Many geologic conditions that lead to falls of ground or instability in roof, rib, pillars, and working face cannot be detected by the unaided eye. If such hazardous geologic conditions can be detected and delineated in advance of mining, remedial measures can prevent instability in mine structures and reduce or eliminate the ground fall threat. Bureau research has developed crosshole geophysical technology to investigate areas between boreholes and delineate geologic anomalies and bad ground conditions in advance of mining. Two acoustic cross-borehole systems are being applied in a wide range of mining applications. Improved waveform processing and tomographic imaging capabilities were developed to process waveforms and image sections between boreholes to assist in the interpretation of subsurface geologic and hydrologic features. These crosshole systems, together with advanced tomographic imaging, permit visually opaque Earth structures to be viewed by acoustic (sound-seismic) waves in a manner similar to the way CAT scans view parts of the body in medical technology. The acoustic cross-borehole systems operate across pairs of slim boreholes of the type normally used in mining exploration. Because higher frequencies are required to resolve many of the small-scale features of most concerns in mining, and because the Earth selectively filters out **high - frequency energy** from acoustic signals, special acoustic emitter and receiver devices, along with personal-computer-based waveform processing and imaging technology, were developed for the high-resolution delineation of geologic structures. Tomographic reconstruction to provide an **image** of the **compressional** wave velocity variation between boreholes is accomplished using a simultaneous iterative reconstruction technique, assuming either straight- or curved-raypath transmission between the emitter and receiver units. An advantage of the cross-borehole approach over conventional surface seismic technology is that probe location in the borehole can be near the geologic target and thus can circumvent lower velocity, highly attenuating surface layers. This permits the propagation of higher frequency waves over shorter range, providing higher resolution capabilities. The following are applications of the cross-hole systems and imaging technology in mining: Ground control hazard detection, mine structural stability monitoring, geologic structure interpretation, site characterization, locating stress concentrations, in situ stress monitoring, fluid migration monitoring, and subsidence detection-delineation.

Descriptors: \*Earth movements; \*Seismic detection; \*Mining engineering

Identifiers: NTISNTND

Section Headings: 48A (Natural Resources and Earth Sciences--Mineral Industries); 48F (Natural Resources and Earth Sciences--Geology and Geophysics)

21/5/7 (Item 1 from file: 144)

DIALOG(R)File 144:Pascal

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16708005 PASCAL No.: 04-0360952

**Wavelet-based pavement distress detection and evaluation**

Wavelets : applications in signal and image processing X : San Diego CA, 4-8 August 2003

JIAN ZHOU; HUANG Peisen S; CHIANG Fu-Pen  
UNSER Michael A, ed; ALDROUBI Akram, ed; LAINE Andrew F, ed  
Department of Mechanical Engineering, State University of New York at  
Stony Brook, Stony Brook, New York 11794-2300, United States  
International Society for Optical Engineering, Bellingham WA, United  
States

Wavelets : applications in signal and image processing. Conference, 10 ( San Diego CA USA) 2003-08-04

Journal: SPIE proceedings series, 2003, 5207 (p.1) 728-739

ISBN: 0-8194-5080-4 ISSN: 1017-2653 Availability: INIST-21760;  
354000117837440690

No. of Refs.: 38 ref.

Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)

Country of Publication: United States

Language: English

A wavelet-based pavement distress detection and evaluation method is proposed. This method consists of two main parts, real-time processing for distress detection and offline processing for distress evaluation. The real-time processing part includes wavelet transform, distress detection and isolation, and **image compression** and noise reduction. When a pavement image is decomposed into different frequency subbands by wavelet transform, the distresses, which are usually irregular in shape, appear as high-amplitude wavelet coefficients in the high-frequency details subbands, while the background appears in the low-frequency approximation subband. Two statistical parameters, high-amplitude wavelet coefficient percentage (HAWCP) and **high - frequency energy** percentage (HFEP), are established and used as criteria for real-time distress detection and distress **image** isolation. For **compression** of isolated distress **images**, a modified EZW (Embedded Zerotrees of Wavelet coding) is developed, which can simultaneously **compress** the **images** and reduce the noise. The **compressed data** are saved to the hard drive for further analysis and evaluation. The offline processing includes distress classification, distress quantification, and reconstruction of the original image for distress segmentation, distress mapping, and maintenance decision-making. The **compressed data** are first loaded and decoded to obtain wavelet coefficients. Then Radon transform is then applied and the parameters related to the peaks in the Radon domain are used for distress classification. For distress quantification, a norm is defined that can be used as an index for evaluating the severity and extent of the distress. Compared to visual or manual inspection, the proposed method has the advantages of being objective, high-speed, safe, automated, and applicable to different types of pavements and distresses.

English Descriptors: Noise reduction; Wavelet transformation; Image processing; Image segmentation; Image reconstruction; **Image** classification; **Image compression** ; **Image** sensor; Noisy **image**

French Descriptors: Reduction bruit; Transformation ondelette; Traitement image; Segmentation image; Reconstruction **image** ; Classification **image** ; **Compression image** ; Detecteur **image** ; **Image** bruitée; Pavement image; Pavement distress detection

25/5/1 (Item 1 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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06986938 E.I. No: EIP04348319026

**Title: Multiresolution transforms in modern image and video coding systems**

Author: **Malvar, Henrique S.**

Corporate Source: Microsoft Research, Redmond, WA 98052, United States

Conference Title: Independent Component Analyses, Wavelets, Unsupervised Smart Sensors, and Neural Networks II

Conference Location: Orlando, FL, United States Conference Date: 20040414-20040415

Sponsor: International Society for Optical Engineering

E.I. Conference No.: 63399

Source: Proceedings of SPIE - The International Society for Optical Engineering Independent Component Analyses, Wavelets, Unsupervised Smart Sensors, and Neural Networks II v 5439 2004.

Publication Year: 2004

CODEN: PSISDG ISSN: 0277-786X

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 0408W4

**Abstract:** This paper presents a brief overview of the multiresolution transform designs used in a few **image** and **video compression** systems, namely H.264, PTC (progressive transform coder), and JPEG2000. The first two use hierarchical transforms, and the third uses wavelet transforms. We review the basis constructions for the hierarchical transforms, and compare some of their characteristics with those of wavelet transforms. In terms of compression performance as measured by peak-signal to noise ratio, H.264 provides the best performance, but at much higher computational **complexity**. In terms of visual **quality**, the multiresolution transforms provide an improvement over block (single resolution) transforms. 18 Refs.

**Descriptors:** Image coding; Signal to noise ratio; Wavelet transforms; Entropy; Motion compensation; Trees (mathematics); Computational **complexity**; Correlation methods

**Identifiers:** Lapped transforms; Hierarchical transforms; Moving picture expert group (MPEG); Entropy order

**Classification Codes:**

723.2 (Data Processing); 716.1 (Information & Communication Theory); 921.3 (Mathematical Transformations); 641.1 (Thermodynamics); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory)); 922.2 (Mathematical Statistics)

723 (Computer Software, Data Handling & Applications); 716 (Electronic Equipment, Radar, Radio & Television); 921 (Applied Mathematics); 641 (Heat & Mass Transfer; Thermodynamics); 721 (Computer Circuits & Logic Elements); 922 (Statistical Methods)

72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATION ENGINEERING); 92 (ENGINEERING MATHEMATICS); 64 (HEAT & THERMODYNAMICS)

25/5/2 (Item 2 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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05851340 E.I. No: EIP01286573795

**Title: Improving wavelet compression with neural networks**

Author: Burges, C.J.C.; Simard, P.Y.; **Malvar, H.S.**

Corporate Source: Microsoft Research, Redmond, WA 98052, United States

Conference Title: Data Compression Conference

Conference Location: Snowbird, UT, United States Conference Date: 20010327-20010329

Sponsor: Brandeis University

E.I. Conference No.: 58224

Source: Data Compression Conference Proceedings 2001. p 486

Publication Year: 2001

CODEN: DDCCF9 ISSN: 1068-0314

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0107W2

Abstract: A neural network predictor was added to the PWC image codec to predict wavelet coefficients. The 2-layer, 20-hidden node, fully connected network was trained offline on box-shaped causal contexts of 24 coefficients. The net was trained on the first 16 images in the Kodak database and tested on images 18-24. Adding the network predictor for wavelet levels 0-2 and subbands LH, HL, and HH reduced the bit rate by 5% across the test set. The reduction in variance did not always result in a reduction of the first order empirical entropy of the wavelet coefficients. (Edited abstract) 1 Refs.

Descriptors: **Image compression** ; **Image** coding; Wavelet transforms; Neural networks; Encoding (symbols); Decoding; Database systems; Computational **complexity** ; Edge detection

Identifiers: Wavelet compression; Neural network training

Classification Codes:

723.2 (Data Processing); 921.3 (Mathematical Transformations); 723.4 (Artificial Intelligence); 723.3 (Database Systems); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory)); 723.5 (Computer Applications)

723 (Computer Software, Data Handling & Applications); 921 (Applied Mathematics); 721 (Computer Circuits & Logic Elements)

72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

25/5/3 (Item 3 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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05354868 E.I. No: EIP99094779636

Title: **Fast progressive wavelet coding**

Author: **Malvar, Henrique S.**

Corporate Source: Microsoft Research, Redmond, WA, USA

Conference Title: Proceedings of the 1999 Data Compression Conference, DCC-99

Conference Location: Snowbird, UT, USA Conference Date: 19990329-19990331

Sponsor: IEEE

E.I. Conference No.: 55240

Source: Data Compression Conference Proceedings 1999. p 336-343

Publication Year: 1999

CODEN: DDCCF9 ISSN: 1068-0314

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications)

Journal Announcement: 9910W3

Abstract: Fast and efficient **image compression** can be achieved with the progressive wavelet coder (PWC) introduced in this paper. Unlike many previous wavelet coders, PWC does not rely on zerotrees or other ordering schemes based on parent-child wavelet relationships. PWC has a very simple structure, based on two key concepts: (1) data-independent reordering and blocking, and (2) low-**complexity** independent encoding of each block via adaptive Rice coding of bit planes. In that way, PWC allows for progressive image encoding that is scalable both in resolution and bit rate, with a fully embedded bitstream. PWC achieves a rate vs. distortion performance that is comparable to that of the state-of-the-art SPIHT (set partitioning in hierarchical trees) coder, but with a better performance/**complexity** ratio. (Author abstract) 13 Refs.

Descriptors: **Image** coding; **Image compression** ; Bit error rate; Computational **complexity** ; Bandwidth; Trees (mathematics)

Identifiers: Fast progressive wavelet coding; Set partitioning in hierarchical trees; Joint photographic experts group

Classification Codes:

723.2 (Data Processing); 723.1 (Computer Programming); 721.1 (Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory); 716.1 (Information & Communication Theory); 921.4



(Combinatorial Mathematics, Includes Graph Theory, Set Theory)  
723 (Computer Software); 721 (Computer Circuits & Logic Elements); 716  
(Radar, Radio & TV Electronic Equipment); 921 (Applied Mathematics)  
72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATIONS); 92  
(ENGINEERING MATHEMATICS)

**25/5/4 (Item 4 from file: 8)**

DIALOG(R) File 8: Ei Compendex(R)

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05118995 E.I. No: EIP98094374159

**Title: Making faces**

Author: Guenter, Brian; Grimm, Cindy; Wood, Daniel; **Malvar, Henrique** ;  
Pighin, Fredrick

Corporate Source: Microsoft Corp

Conference Title: Proceedings of the 1998 Annual Conference on Computer  
Graphics, SIGGRAPH

Conference Location: Orlando, FL, USA Conference Date:  
19980719-19980724

E.I. Conference No.: 48945

Source: Proceedings of the ACM SIGGRAPH Conference on Computer Graphics  
1998. ACM, New York, NY, USA. p 55-65

Publication Year: 1998

CODEN: 002150

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 9811W2

Abstract: We have created a system for capturing both the three  
dimensional geometry and color and shading information for human facial  
expressions. We use this data to reconstruct photorealistic, 3D animations  
of the captured expressions. The system uses a large set of sampling points  
on the face to accurately track the three dimensional deformations of the  
face. Simultaneously with the tracking of the geometric data, we capture  
multiple high resolution, registered video images of the face. These images  
are used to create a texture map sequence for a three dimensional polygonal  
face model which can then be rendered on standard 3D graphics hardware. The  
resulting facial animation is surprisingly life-like and looks very much  
like the original live performance. Separating the capture of the geometry  
from the texture images eliminates much of the variance in the image data  
due to motion, which increases compression ratios. Although the primary  
emphasis of our work is not compression we have investigated the use of a  
novel method to **compress** the geometric **data** based on principal  
components analysis. The texture sequence is **compressed** using an MPEG4  
**video** codec. Animations reconstructed from 512 multiplied by 512 pixel  
textures look good at data rates as low as 240 Kbits per second. (Author  
abstract) 15 Refs.

Descriptors: Animation; Three dimensional computer graphics; Pattern  
recognition systems; Computer systems programming; Computational geometry;  
Image analysis; **Image quality** ; **Image compression** ; **Image** coding;  
**Image** reconstruction

Identifiers: Facial animation; Motion picture experts group (MPEG)  
standards

Classification Codes:

723.5 (Computer Applications); 741.1 (Light/Optics); 723.1 (Computer  
Programming); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set  
Theory); 723.2 (Data Processing)

723 (Computer Software); 741 (Optics & Optical Devices); 921 (Applied  
Mathematics)

72 (COMPUTERS & DATA PROCESSING); 74 (OPTICAL TECHNOLOGY); 92  
(ENGINEERING MATHEMATICS)

**25/5/5 (Item 5 from file: 8)**

DIALOG(R) File 8: Ei Compendex(R)

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04735149 E.I. No: EIP97063704473

**Title: Lapped biorthogonal transforms for transform coding with reduced blocking and ringing artifacts**

**Author: Malvar, Henrique S.**

Corporate Source: PictureTel Corp, Andover, MA, USA

Conference Title: Proceedings of the 1997 IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP. Part 3 (of 5)

Conference Location: Munich, Ger Conference Date: 19970421-19970424

Sponsor: IEEE

E.I. Conference No.: 46531

Source: Speech Processing, Digital Signal Processing ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings v 3 1997. IEEE, Piscataway, NJ, USA, 97CB36052. p 2421-2424

Publication Year: 1997

CODEN: IPRODJ ISSN: 0736-7791

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 9708W3

**Abstract:** Two new lapped transforms are introduced: the LBT (lapped biorthogonal transform) and the HLBT (hierarchical lapped biorthogonal transform). The LBT has the same computational **complexity** of the LOT (lapped orthogonal transform), with much less blocking artifacts. The HLBT has a significantly lower computational **complexity** than the LOT, essentially no blocking artifacts, and less ringing artifacts than the commonly-used DCT (discrete cosine transform). The LBT and HLBT have a transform coding gain that is typically between 0.5 and 2.5 dB higher than that of the DCT. Image coding examples using JPEG and embedded zerotree coders demonstrate the better performance of the LBT and HLBT. (Author abstract) 10 Refs.

**Descriptors:** Image compression ; Image coding; Mathematical transformations; Computational **complexity** ; Gain measurement; Trees (mathematics); Block codes

**Identifiers:** Transform coding (TC); Lapped biorthogonal transform (LBT); Hierarchical lapped biorthogonal transform (HLBT); Lapped orthogonal transform (LOT); Discrete cosine transform (DCT); Joint photographers expert group (JPEG)

**Classification Codes:**

723.2 (Data Processing); 921.3 (Mathematical Transformations); 721.1 (Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory); 942.2 (Electric Variables Measurements); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 723.1 (Computer Programming)

723 (Computer Software); 921 (Applied Mathematics); 721 (Computer Circuits & Logic Elements); 942 (Electrical & Electronic Measuring Instruments)

72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS); 94 (INSTRUMENTS & MEASUREMENT)

**25/5/6 (Item 6 from file: 8)**

DIALOG(R) File 8: Ei Compendex(R)

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04314005 E.I. No: EIP95122939034

**Title: Improved Chen-Smith image coder**

**Author:** Rubino, Eduardo M.; Queiroz, Ricardo L.; **Malvar, Henrique S.**

Corporate Source: Univ. de Brasilia, Brasilia, Brazil

Source: Journal of Electronic Imaging v 4 n 2 Apr 1995. p 151-160

Publication Year: 1995

CODEN: JEIME5 ISSN: 1017-9909

Language: English

Document Type: JA; (Journal Article) Treatment: T; (Theoretical); A; (Applications)

Journal Announcement: 9602W4

**Abstract:** A new transform coder based on the zonal sampling strategy, which outperforms the JPEG baseline coder with comparable computational **complexity**, is presented. The primary transform used is the 8- x 8-pixel-block discrete cosine transform, although it can be replaced by other transforms, such as the lapped orthogonal transform, without any

change in the algorithm. This coder is originally based on the Chen-Smith coder; therefore we call it an improved Chen-Smith (ICS) coder. However, because many new features were incorporated in this improved version, it largely outperforms its predecessor. Key approaches in the ICS coder, such as a new quantizer design, arithmetic coders, noninteger bit-rate allocation, decimalized variance maps, distance-based block classification, and human visual sensitivity weighting, are essential for its high performance. **Image compression** programs were developed and applied to several test images. The results show that the ICS performs substantially better than the JPEG coder. (Author abstract) 24 Refs.

Descriptors: Image coding; Computational **complexity** ; Mathematical transformations; Algorithms; Maps; **Image compression** ; Testing; Visibility

Identifiers: Chen-Smith coder; JPEG coder; Bit rate allocation

Classification Codes:

723.1 (Computer Programming); 741.2 (Vision); 921.3 (Mathematical Transformations)  
723 (Computer Software); 741 (Optics & Optical Devices); 921 (Applied Mathematics)  
72 (COMPUTERS & DATA PROCESSING); 74 (OPTICAL TECHNOLOGY); 92 (ENGINEERING MATHEMATICS)

25/5/7 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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7715563 INSPEC Abstract Number: B2003-10-6135C-011, C2003-10-5260D-009

**Title: Low- complexity transform and quantization in H.264/AVC**

Author(s): **Malvar, H.S.** ; Hallapuro, A.; Karczewicz, M.; Kerofsky, L.

Author Affiliation: Microsoft Res., Redmond, WA, USA

Journal: IEEE Transactions on Circuits and Systems for Video Technology  
vol.13, no.7 p.598-603

Publisher: IEEE,

Publication Date: July 2003 Country of Publication: USA

CODEN: ITCTEM ISSN: 1051-8215

SICI: 1051-8215(200307)13:7L:598:CTQ;1-X

Material Identity Number: 0647-2003-008

U.S. Copyright Clearance Center Code: 1051-8215/03/\$17.00

Language: English Document Type: Journal Paper (JP)

Treatment: Theoretical (T)

**Abstract:** This paper presents an overview of the transform and quantization designs in H.264. Unlike the popular 8\*8 discrete cosine transform used in previous standards, the 4\*4 transforms in H.264 can be computed exactly in integer arithmetic, thus avoiding inverse transform mismatch problems. The new transforms can also be computed without multiplications, just additions and shifts, in 16-bit arithmetic, thus minimizing computational **complexity**, especially for low-end processors. By using short tables, the new quantization formulas use multiplications but avoid divisions. (18 Refs)

Subfile: B C

Descriptors: code standards; computational **complexity** ; **data compression** ; digital arithmetic; quantisation (signal); telecommunication standards; transform coding; transforms; video coding

Identifiers: low- **complexity** transform; low- **complexity** quantization; H.264/AVC; integer arithmetic; additions; shifts; arithmetic; computational **complexity** minimization; low-end processors; short tables; quantization formulas; multiplications; H.264 video coding standard; discrete cosine transform; DCT; 16 bit

Class Codes: B6135C (Image and video coding); B0290X (Integral transforms in numerical analysis); C5260D (Video signal processing); C4188 (Integral transforms in numerical analysis); C5230 (Digital arithmetic methods)

Numerical Indexing: word length 1.6E+01 bit

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25/5/8 (Item 1 from file: 144)

DIALOG(R)File 144:Pascal

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13554166 PASCAL No.: 98-0255672

**Motion estimation using a complex -valued wavelet transform**  
**Theory and application of filter banks and wavelet transforms**

MAGAREY J; KINGSBURY N

AKANSU Ali N, ed; MALLAT Stephane, ed; MALVAR Henrique , ed; PARHI Keshab K, ed; SMITH Mark J T, ed; TEWFIK Ahmed, ed; VAIDYANATHAN P P, ed  
Visual Processing Group, Cooperative Research Centre for Sensor Signal and Information Processing, Adelaide, Australia; Signal Processing and Communications Laboratory, Department of Engineering, Cambridge University, Cambridge, United Kingdom

New Jersey Institute of Technology, United States; Ecole Polytechnique, France; Microsoft, United States; University of Minnesota, United States; Georgia Institute of Technology, United States; California Institute of Technology, United States

Journal: IEEE transactions on signal processing, 1998, 46 (4) 1069-1084

ISSN: 1053-587X Availability: INIST-222E3; 354000075273940180

No. of Refs.: 29 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United States

Language: English

**Abstract-**This paper describes a new motion estimation algorithm that is potentially useful for both computer vision and **video compression** applications. It is hierarchical in structure, using a separable two-dimensional (2-D) discrete wavelet transform (DWT) on each frame to efficiently construct a multiresolution pyramid of subimages. The DWT is based on a **complex -valued** pair of four-tap FIR filters with Gabor-like characteristics. The resulting **complex** DWT (CDWT) effectively implements an analysis by an ensemble of Gabor-like filters with a variety of orientations and scales. The phase difference between the subband coefficients of each frame at a given subpel bears a predictable relation to a local translation in the region of the reference frame subtended by that subpel. That relation is used to estimate the displacement field at the coarsest scale of the multiresolution pyramid. Each estimate is accompanied by a directional confidence measure in the form of the parameters of a quadratic matching surface. The initial estimate field is progressively refined by a coarse-to-fine strategy in which finer scale information is appropriately incorporated at each stage. The accuracy, efficiency, and robustness of the new algorithm are demonstrated in comparison testing against hierarchical implementations of intensity gradient-based and fractional-precision block matching motion estimators.

English Descriptors: Image processing; Motion estimation; Signal **compression** ; Video signal; Computer vision; Hierarchized structure; Wavelet transformation; Discrete transformation; Filter bank; Finite impulse response filter; Multiresolution analysis; Subband decomposition

French Descriptors: Traitement **image** ; Estimation mouvement; **Compression** signal; Signal **video** ; Vision ordinateur; Structure hierarchisee; Transformation ondelette; Transformation discrete; Banc filtre; Filtre reponse impulsion finie; Analyse multiresolution; Decomposition sous bande

Classification Codes: 001D04A05C

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25/5/9 (Item 2 from file: 144)

DIALOG(R) File 144:Pascal

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13554162 PASCAL No.: 98-0255668

**Robust image transmission over energy-constrained time-varying channels**  
**using multiresolution joint source-channel coding**  
**Theory and application of filter banks and wavelet transforms**

KOZINTSEV I; RAMCHANDRAN K

AKANSU Ali N, ed; MALLAT Stephane, ed; **MALVAR Henrique**, ed; PARHI Keshab K, ed; SMITH Mark J T, ed; TEWFIK Ahmed, ed; VAIDYANATHAN P P, ed  
Electrical and Computer Engineering Department, University of Illinois at Urbana-Champaign, Urbana, IL 61801, United States

New Jersey Institute of Technology, United States; Ecole Polytechnique, France; Microsoft, United States; University of Minnesota, United States; Georgia Institute of Technology, United States; California Institute of Technology, United States

Journal: IEEE transactions on signal processing, 1998, 46 (4) 1012-1026

ISSN: 1053-587X Availability: INIST-222E3; 354000075273940140

No. of Refs.: 32 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United States

Language: English

We explore joint source-channel coding (JSCC) for time-varying channels using a multiresolution framework for both source coding and transmission via novel multiresolution modulation constellations. We consider the problem of still image transmission over time-varying channels with the channel state information (CSI) available at 1) receiver only and 2) both transmitter and receiver being informed about the state of the channel, and we quantify the effect of CSI availability on the performance. Our source model is based on the wavelet image decomposition, which generates a collection of subbands modeled by the family of generalized Gaussian distributions. We describe an algorithm that jointly optimizes the design of the multiresolution source codebook, the multiresolution constellation, and the decoding strategy of optimally matching the source resolution and signal constellation resolution "trees" in accordance with the time-varying channel and show how this leads to improved performance over existing methods. The real-time operation needs only table lookups. Our results based on a wavelet image representation show that our multiresolution-based optimized system attains gains on the order of 2 dB in the reconstructed image **quality** over single-resolution systems using channel optimized source coding.

English Descriptors: Image processing; Image transmission; Digital transmission; **Data compression**; Coding; Time variable channel; Multiresolution analysis; Quantization; Hierarchical system; Subband decomposition; Wavelet transformation

French Descriptors: Traitement image; Transmission **image**; Transmission numerique; **Compression** donnee; Codage; Canal variant dans temps; Analyse multiresolution; Quantification; Systeme hierarchise; Decomposition sous bande; Transformation ondelette

Classification Codes: 001D04A05C; 001D04B02G

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25/5/10 (Item 1 from file: 34)

DIALOG(R) File 34:SciSearch(R) Cited Ref Sci  
(c) 2004 Inst for Sci Info. All rts. reserv.

05250553 Genuine Article#: VL016 Number of References: 17

**Title: EXTENDED COSINE BASES AND APPLICATIONS TO AUDIO CODING**

Author(s): **MALVAR HS**

Corporate Source: PICTURETEL CORP/ANDOVER//MA/01810

Journal: COMPUTATIONAL AND APPLIED MATHEMATICS, 1996, V15, N2, P111-123

ISSN: 0101-8205

Language: ENGLISH Document Type: ARTICLE

Geographic Location: USA

Subfile: SciSearch

Journal Subject Category: MATHEMATICS, APPLIED

Abstract: We present local cosine bases with extended time overlap, a continuous-time version of the extended lapped transform (ELT). The ELT has better frequency resolution than the cosine basis proposed by Meyer as a continuous-time version of the modulated lapped transform (MLT).

The HLT (hierarchical lapped transform) multiresolution decomposition based on the ELT is reviewed, as well as an example of its application to audio coding, with a performance similar to that of the MPEG Layer III standard but with a lower computational **complexity** .

Descriptors--Author Keywords: LOCAL BASES ; WAVELETS ; LAPPED TRANSFORMS ;  
FOURIER ANALYSIS ; ELT ; AUDIO CODING

Identifiers--KeyWords Plus: LAPPED TRANSFORMS

Research Fronts: 94-0623 001 (TIME-FREQUENCY DISTRIBUTIONS; DOPPLER  
SIGNALS; TREE-STRUCTURED VECTOR QUANTIZATION; SPEECH CODING; ADAPTIVE  
KERNEL DESIGN; **COMPRESSION OF DIGITAL IMAGES** )

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Set	Items	Description
S1	67709	COMPRESS?(3N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED OR JPEG OR JPG OR - GIF OR TIFF? ? OR BITMAP? ? OR BMP)
S2	81676	COMPRESS?(3N) (CONTENT? ? OR DATA OR INFORMATION OR FILE? ? OR DOCUMENT? ? OR ARTICLE? ? OR TEXT? ? OR TEXTUAL OR EMAIL OR MAIL OR MESSAGE? ?)
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S4	222807	SIZE(5N) (SMALL??? OR MINIMUM OR MINIMAL OR LOW??? OR NOMINAL OR LEAST)
S5	10728	S3:S4(10N) (DETERMIN? OR ESTIMAT??? OR ASSESS? OR IDENTIF? - OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPUTE OR COMPUTES - OR COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR DISCERN?)
S6	3094412	WEIGHT??? OR SCOR??? OR GRAD??? OR RATED OR RATING
S7	2005736	HIGH()FREQUENCY()ENERGY OR COMPLEX? OR INTRICA? OR DENSITY
S8	7619097	IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ? OR GRAPHIC?? OR MEDIA OR MULTIMEDIA OR VIDEO? ? OR MOVIE? ? OR FILM? ? OR ANIMATION OR ANIMATED
S9	93999	JPEG OR JPG OR GIF OR TIFF? ? OR BITMAP? ? OR BMP
S10	63	S1:S2(50N)S5(50N)QUALITY
S11	43	RD (unique items)
S12	38	S11 NOT PD>20020314
S13	268	S6(7N)S8:S9(7N)S7(7N) (DETERMIN? OR ESTIMAT? OR ASSESS? OR - IDENTIF???? OR IDENTIFICATION OR CALCULAT? OR ASCERTAIN? OR FIND??? OR COMPUTE OR COMPUTES OR COMPUTED OR COMPUTING OR GAUG? OR MEASUR? OR DISCERN? OR ASSIGN??? OR GIVEN OR GIVING)
S14	9	S1:S2(100N)S13
S15	6	RD (unique items)
S16	172	HIGH()FREQUENCY()ENERGY
S17	1	S1:S2(100N)S16

12/3,K/1 (Item 1 from file: 275)  
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02581129 SUPPLIER NUMBER: 83041567 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**SHRINKING THE VIDEO: HOW CODECS WORK -- Before you even start to research streaming-media solutions, take some time to understand the variety of open codec standards. You'll be glad you did.**

Woods, Darrin  
Network Computing, 77  
Feb 18, 2002

ISSN: 1046-4468 LANGUAGE: English RECORD TYPE: Fulltext  
WORD COUNT: 2341 LINE COUNT: 00176

... may take shortcuts to get to the end result, leaving a video signal that does not retain all the original **quality** and clarity or isn't compressed as tightly. The trick is to **find** the balance between small files and real-time **compression** that gives the **best quality**.

Video codecs are typically classified as lossy or lossless. Typically, lossy means a visible loss of **quality**, whereas lossless defines an image with imperceptible loss. Truth be told, most video codecs are lossy to some extent. Because video **quality** is subjective, some amount of loss is acceptable without degrading the experience.

The MPEG family  
The most recognizable form of...

12/3,K/2 (Item 2 from file: 275)  
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02566792 SUPPLIER NUMBER: 81008762 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Low-Res Editing in Final Cut Pro 2: Hands-on Tips and Expert Advice for Savvy Mac Users. (How-To).(Tutorial)**

Linecker, Anton  
Macworld, 19, 1, 68(6)  
Jan, 2002

DOCUMENT TYPE: Tutorial ISSN: 0741-8647 LANGUAGE: English  
RECORD TYPE: Fulltext  
WORD COUNT: 2639 LINE COUNT: 00194

... manage low-res editing.

In this article, you'll learn how to capture using Photo-JPEG, a format that efficiently **compresses video** but retains respectable image **quality**. Then we'll show you how to set up a low-res sequence, edit that sequence, and finalize your project...

...article "Designing DVD Menus for DVD Studio Pro" (Macworld, July 2001).  
(Graph omitted)

RELATED ARTICLE: 1. Choose a Capture Setting **Finding** your computer's **maximum** rate of **compression** is essential before you start a project. Steps 1, 2, and 3 will help you determine the capture setting that ...

12/3,K/3 (Item 3 from file: 275)  
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02400599 SUPPLIER NUMBER: 62052841 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Affordable digital cameras.(reviews of six under-\$550 cameras) (Hardware Review) (Evaluation)**

CALABRO, EILEEN BIEN  
Home Office Computing, 18, 5, 69  
May, 2000

DOCUMENT TYPE: Evaluation ISSN: 0899-7373 LANGUAGE: English  
RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 2851 LINE COUNT: 00239



... modest desktop publishing and presentation work can be found for as little as \$299--and \$500 will get you image **quality** that just a year ago would have cost twice that.

Don't believe us? For this buyer's guide, we...

...LCD display, an optical viewfinder, 8MB of removable image storage, at least four flash modes, a video-out port, several **file** format and **compression** choices, a self-timer, date and time stamps, and a one-year warranty.

Four of our six cameras boast optical...

...Macs.

We used the cameras to photograph subjects indoors and out, in several flash modes, at multiple resolutions and image- **quality** settings (our comments on image **quality** are based on each camera's **highest - quality , lowest - compression** mode). We were surprised to **find** that the most feature-rich cameras didn't always supply the sharpest, most colorful pictures--and, conversely, that the lowest...

12/3,K/4 (Item 4 from file: 275)

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02361363 SUPPLIER NUMBER: 58458806 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Software: focus on graphics and imaging. (six graphics programs) (Software Review) (Evaluation)**

T H E Journal (Technological Horizons In Education), 27, 5, 42  
Dec, 1999

DOCUMENT TYPE: Evaluation ISSN: 0192-592X LANGUAGE: English

RECORD TYPE: Fulltext; Abstract

WORD COUNT: 1091 LINE COUNT: 00095

... design. New features of the program set out to make Web design smooth and easy. There are advanced optimizing and **graphic compression** capabilities, as well as more advanced features for things like JavaScript rollovers, animation and image slicing.

Multiple LiveView panels in the software's new Save for the Web window help designers **find** the **best compression** options, translating into shorter download times and higher- **quality** Web graphics. The new Lossy GIF feature dramatically reduces file size with minimal loss of image **quality** . Users can quickly create instant transparency with the color decontamination capabilities of the new Background Eraser and Extract Image tools...

12/3,K/5 (Item 5 from file: 275)

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02246333 SUPPLIER NUMBER: 21261214 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Cubic VideoComm does video email. (CVideo-Mail 2.0 video board captures video for transmission at E-mail attachments) (Software Review) (Evaluation)**

Yuan, Betty

Teleconnect, v16, n11, p20(2)

Nov, 1998

DOCUMENT TYPE: Evaluation ISSN: 0740-9354 LANGUAGE: English

RECORD TYPE: Fulltext; Abstract

WORD COUNT: 780 LINE COUNT: 00063

... video email is effortless: press "record" or double-click on the video screen and the "film" starts rolling. Control video **quality** by choosing the file size you want to send ( **determined** by the amount of **compression** ): **small** (0.5MB/min); **medium** (1MB/min); **large** (2MB/min); or **custom** (lets you control frame rates from one to 24fps, and adjust image **quality** on an increasing scale from one to five).

At highest **compression** , audio and **video** are slightly

de-synchronized and choppy, resulting in a "dubbed" effect. Less compression (medium and large) provides a much better **quality** picture and better synch, though at the cost of bandwidth. Actual upload/download times depend on many variables -- but we...

12/3,K/6 (Item 6 from file: 275)  
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02053122 SUPPLIER NUMBER: 18791110 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**A desktop-video primer. (equipment for video) (includes related articles on tips and compression techniques) (Buyers Guide)**  
Grey, Kennedy  
MacUser, v12, n12, p123(3)  
Dec, 1996  
DOCUMENT TYPE: Buyers Guide ISSN: 0884-0997 LANGUAGE: English  
RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 2758 LINE COUNT: 00212

... in drive that came with your Mac, and use your new hard disk as the scratch disk for recording.

RELATED **ARTICLE** : Making Smaller **Movies** / **compression** strategies  
FACE IT, YOU'VE GOT TO **COMPRESS** your **movies** before playing them back on the Mac or adding them to your Web site. Neither the fastest Mac nor the Internet can move uncompressed data fast enough to play video cleanly. But how much should you **compress** your **movie**, and how should you go about it? Since greater **compression** equals lower **image** quality, you need to **find** an optimum compression rate, based on your intended playback medium and the image quality you need. Adobe Premiere 4.2...  
...189), from Terran Interactive (800-577-3443 or 408-278-9065). This software is designed to create the best-possible **video - compression** settings, based on **information** you supply during an "interview" process. You're asked to decide the relative importance of such things as **compression** rate versus image quality, audio quality versus video **quality**, and smooth motion versus clear image quality. Also, MovieCleaner Pro compresses your movie based on what it has learned. Experienced...

12/3,K/7 (Item 7 from file: 275)  
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02044666 SUPPLIER NUMBER: 19102736 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Over the paradigm cliff. (rise of code division multiple access technology) (Telecosm and Beyond) (Technology Information) (Column)**  
Gilder, George  
Forbes, v159, n4, pS29(5)  
Feb 24, 1997  
DOCUMENT TYPE: Column ISSN: 0015-6914 LANGUAGE: English  
RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 4122 LINE COUNT: 00326

... get the 28.8 modem, the celebration of narrowband ISDN. You get 8-kilobit vocoders for cellular that give voice **quality** inferior to wire line. You get 384-kilobit video teleconferencing inferior to NTSC television.

In a world where several companies...

...an entire worldwide communications net that carries a rough total of just one terabit per second. Everywhere you look you **find** capacity expanded through TDM (time division multiplexing), by **compressing** **messages** into ever **smaller** time slots and spans of spectrum in both wired and wireless telephone networks.

With the rise of data, bursty and...

12/3,K/8 (Item 8 from file: 275)

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01929460 SUPPLIER NUMBER: 18229712

**Windows 95 shareware. (enhancing Windows 95 features with shareware)  
(includes related articles on online shareware locations and Macintosh  
shareware) (Product Information)**

Lindquist, Christopher

PC Entertainment, v3, n4, p96(2)

April, 1996

LANGUAGE: English RECORD TYPE: Abstract

...ABSTRACT: but some will increase user productivity and make Windows computing a more enjoyable event. Users are advised to obtain a **quality** virus protection program because shareware downloaded from the Internet may be contaminated with bugs. PKWare's PKZip **data compression** software makes **files smaller** and easier to manipulate while Nico Mak **Computing** 's WinZip operating system utility gives users a convenient GUI for managing files. McAfee Associates' VirusScan for Windows 95 is...

**12/3,K/9 (Item 9 from file: 275)**

DIALOG(R)File 275:Gale Group Computer DB(TM)

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01723016 SUPPLIER NUMBER: 16311159 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Maximize the output of your video/animations. (Matrox Electronics'  
Animation Xpress video capture/compression board set) (Hardware Review)  
(Evaluation)**

Tissavary, John

Computer Graphics World, v17, n10, p65(2)

Oct, 1994

DOCUMENT TYPE: Evaluation ISSN: 0271-4159 LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 1004 LINE COUNT: 00072

... of my computer and hard drive, check its data throughput, and write a configuration file, which would be used to **calculate** the **lowest** possible **JPEG compression** ratio for each frame of a file. When writing a file to tape, you can't control the JPEG ratio; the software automatically shoots for the highest **quality** possible. If you're using MAX to capture and **compress video** on the fly, however, you can determine the JPEG ratio via slider bars. I actually talked to Matrox about adding...

**12/3,K/10 (Item 10 from file: 275)**

DIALOG(R)File 275:Gale Group Computer DB(TM)

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01636413 SUPPLIER NUMBER: 15119560 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Video compression/decompression chips aim at wide range of applications.  
(Integrated Information Technologies' Vision Control Processor and Audio  
Digital Imaging's Apogee M-1 processor family) (Software & Development  
Tools) (Product Announcement)**

Williams, Tom

Computer Design, v32, n12, p40(2)

Dec, 1993

DOCUMENT TYPE: Product Announcement ISSN: 0010-4566 LANGUAGE:

ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 842 LINE COUNT: 00066

... achieved with a programmable platform. Motion estimation and error correction are likewise carried out under program control. For honing picture **quality**, the VCP offers pre- and post-processing with programmable filtering, scaling, color-conversion and graphics-overlay functions. With the ADI...

...or ME chips. The F chip offers median, temporal and spatial filtering to insure clean data which, in turn, yields **lower compressed data** rates. Filter coefficients are software-selectable. The ME motion- **estimation** chip performs realtime vector searches on 4 x 4 pixel blocks with half-pixel accuracy.

Both Audio Digital Imaging and Integrated Information Technologies appear to be targeting the same arena of applications: MPEG **compression** /decompression, **video** conferencing, **multimedia** applications and decode-only applications such as CD-ROM and cable broadcast of digitally compressed programs. Both companies are convinced...

12/3,K/11 (Item 11 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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01527551 SUPPLIER NUMBER: 12528649 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Microsoft blasts into sound-card arena. (Microsoft Corp.'s Foghorn sound board for Microsoft Windows)**  
Fisher, Susan E.  
PC Week, v9, n32, p1(2)  
August 10, 1992  
ISSN: 0740-1604 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 567 LINE COUNT: 00046

... its Deskpro/M line.

The ASIC produces relatively compact sound files -- about 700K bytes per minute -- when processing basic telephone- **quality**, monophonic, 8-bit, 11KHz audio. But 16-bit, CD- **quality** stereo-sound files can require up to eight times as much storage space.

Potential of DSP With a digital-signal processor (DSP) chip and **compression** software, sound **files** can be **compressed** at least tenfold. Although sources said Foghorn does not include a DSP chip, Microsoft could easily build it into future cards. In addition, sources said Microsoft is **determining** how **best** to incorporate **file - compression** software into future versions of Windows.

Older games and applications designed specifically to run under DOS and use Creative Labs...

12/3,K/12 (Item 12 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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01427972 SUPPLIER NUMBER: 10589134 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**CD-I full-motion video encoding on a parallel computer. (includes related articles on the Parallel Object-Oriented Machine and the CD-I full-motion video decoder) (technical)**  
Sijstermans, Frans; van der Meer, Jan  
Communications of the ACM, v34, n4, p81(11)  
April, 1991  
DOCUMENT TYPE: technical ISSN: 0001-0782 LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 7435 LINE COUNT: 00585

... Furthermore, we especially aim at long video sequences and for those the start-up and die-out effects are relatively **small**.

#### **Video Compression**

The motion **estimation** does not do any compression; it just **finds** the best-matching blocks. In the **compression** phase this **information** will be used if a block is encoded relative to another block. The goal of this phase is to reduce...

...the video stream to the desired bit rate without losing so much information that it will severely influence the image **quality**. A diagram showing the components of the **video compression** is given in Figure 2.

The **video compression** starts with a decision determining how to encode the blocks. Again we distinguish between predicted frames and

interpolated frames. For...

12/3,K/13 (Item 13 from file: 275)  
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01427966 SUPPLIER NUMBER: 10582080 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Standards and the emergence of digital multimedia systems. (includes  
glossary of terms)**  
Fox, Edward A.  
Communications of the ACM, v34, n4, p26(4)  
April, 1991  
ISSN: 0001-0782 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 3935 LINE COUNT: 00346

... signal  
composite signal single signal encoding the luminance and chrominance  
signals  
deadzone (threshold) in quantization, levels below are zeroed  
entropy **measure** of information in **message** ( **lower** bound for  
**compression** )  
entropy encoder lossless **compression** based on **message** -part  
probabilities  
filtering eliminating parts of data (e.g., high-frequency emphasis)  
fractal **image compression** associate rules for a close fractal  
with an image  
frame in motion video, a single image (e.g., every 1...  
...of external video source, computer video  
human visual system (HVS) considered when weighting transform  
coefficients to give best perceived image **quality**  
hypermedia hypertext-type linking with multimedia  
interpolation (upsampling) reconstructing output from sample of input  
values  
layered structure bit stream coded bits organization (e.g., sequence,  
**picture** )  
lossless (noiseless) **compression** ensures original **data** is exactly  
recoverable  
lossy (noisy) compression original data is not completely recoverable  
luminance brightness (monochrome) of an image (e.g...)

12/3,K/14 (Item 1 from file: 621)  
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)  
(c) 2004 The Gale Group. All rts. reserv.

02151505 Supplier Number: 55498057 (USE FORMAT 7 FOR FULLTEXT)  
**MetaStream 3D Plug-in Selected by Sony, CBS for Online Sweepstakes.**  
Business Wire, p0073  
August 19, 1999  
Language: English Record Type: Fulltext  
Document Type: Newswire; Trade  
Word Count: 1054

... to manipulate them in real time.  
This, in turn, permits Web content developers to generate sites of  
the highest possible **quality** for enjoyment by power users, while still  
assuring the satisfaction of users with limited bandwidth and/or **computing**  
power.

MetaStream **files** are also **small** , **compressed** and scalable, more  
so than today's other 3D technologies for the Internet, resulting in faster  
viewing times. Further, MetaStream...

12/3,K/15 (Item 1 from file: 636)  
DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

05357674 Supplier Number: 84926197 (USE FORMAT 7 FOR FULLTEXT)  
**3DCompress for efficient online STL viewing. (Software News).**  
Rapid Prototyping Report, v11, n10, p7(2)  
Oct, 2001  
Language: English Record Type: Fulltext  
Document Type: Newsletter; Trade  
Word Count: 493

... as much as 98 percent with no loss of detail using what 3D  
Compression chief executive Anshuman Razdan calls lossless **compression**.  
The **compressed files** can be viewed, but can't be expanded again for use  
in rapid prototyping, although Razdan says this feature might be added in  
the future.

We loaded an STL **measuring** 3,645 kilobytes, and at the **minimum**  
**compression** rate, 3DCompress reduced it by 96 percent to just 145  
kilobytes. At maximum compression, we did see a slight degradation in model  
**quality**, but the file size was reduced to 84 kilobytes. By comparison,  
WinZip **compressed** the **file** by only about 50 percent.

After compression, 3DCompress displays the smaller file in a window  
next to the original for over a 56-kilobyte-per-second Internet connection,  
whereas the **compressed file** would take only five seconds.

After **compressing** a **file**, 3DCompress generates an HTML that  
includes JavaScript controls so that a person viewing the file can  
manipulate the image by...

12/3,K/16 (Item 2 from file: 636)  
DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

04830113 Supplier Number: 64690999 (USE FORMAT 7 FOR FULLTEXT)  
**BRING IMAGES INTO FOCUS.(digital imaging process)**  
Farace, Joe  
The Press, v22, n4, p39  
April, 2000  
Language: English Record Type: Fulltext  
Document Type: Magazine/Journal; Trade  
Word Count: 1767

... more and more under-\$1,000 models have them.

\* All cameras use some kind of JPEG (Joint Photographic Experts  
Group) **compression** to store **images**. **JPEG** techniques **compress** an  
**image**, and the greater the compression ratio, the greater loss of **quality**  
you can expect. Be sure to check what ratios are used to store images in  
the camera. Lower compression produces fewer, better **quality** images. The  
best option for **maximum quality** is "no **compression**."

\* A digital **photograph**'s resolution is **measured** by the width and  
height of the image measured in pixels. The higher an image's resolution --  
the more pixels it has -- the better the visual **quality** will be.

At the introductory end of the digital camera spectrum, your choices  
range from 820 x 240 to 1...

12/3,K/17 (Item 3 from file: 636)  
DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

04412302 Supplier Number: 55544859 (USE FORMAT 7 FOR FULLTEXT)  
**METACREATIONS: Sony/Late Show Ultimate Cyber-Search Sw Sweepstakes launches**  
**new model for web advertising.**  
M2 Presswire, pNA  
August 23, 1999  
Language: English Record Type: Fulltext  
Document Type: Newswire; Trade  
Word Count: 899

... to manipulate them in real time. This, in turn, permits Web content  
developers to generate sites of the highest possible **quality** for

enjoyment by power users, while still assuring the satisfaction of users with limited bandwidth and/or **computing** power.

MetaStream **files** are also **small**, **compressed** and scalable, more so than today's other 3D technologies for the Internet, resulting in faster viewing times. Furthermore, MetaStream...

12/3,K/18 (Item 4 from file: 636)

DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
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04403034 Supplier Number: 55417722 (USE FORMAT 7 FOR FULLTEXT)

**METACREATIONS: Mac users enter new era of ph photo-realistic 3D on the web.**

M2 Presswire, pNA

August 11, 1999

Language: English Record Type: Fulltext

Document Type: Newswire; Trade

Word Count: 789

... to manipulate them in real time. This, in turn, permits Web content developers to generate sites of the highest possible **quality** for enjoyment by power users, while still assuring the satisfaction of users with limited bandwidth and/or **computing** power.

MetaStream **files** are also **small**, **compressed** and scalable, more so than today's other 3D technologies for the Internet, resulting in faster viewing times. Further, MetaStream...

12/3,K/19 (Item 5 from file: 636)

DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

04171161 Supplier Number: 54620579 (USE FORMAT 7 FOR FULLTEXT)

**NAB Preview; Storage.**

Crooks, Roger

Broadcast Engineering, pNA

March, 1999

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Newsletter; Trade

Word Count: 962

... differ from videotape cart machines in that they are not format specific and can store material (including metadata) in any **compression** format. Digital **data** can be transferred from server to data tape (or vice versa) at faster than play speed using secure file transfer...

...video server will offer a variety of compression formats to match your choice of VTR format and application. Compression format **determines** the efficiency of the storage. Currently MPEG offers the **highest compression** efficiency, provides better **quality** at lower data rates and is particularly well suited to transmission applications. That means more record time per storage dollar...

12/3,K/20 (Item 6 from file: 636)

DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

03448583 Supplier Number: 47105142 (USE FORMAT 7 FOR FULLTEXT)

**ITERATED SYSTEMS: Online video made easy with Iterated Systems' media partners alliance programme**

M2 Presswire, pN/A

Feb 6, 1997

Language: English Record Type: Fulltext

Document Type: Newswire; Trade

Word Count: 706

... programme and will provide comprehensive support to partners to

ensure that they have the best resources available to them. Authorised **video compression** and **content** partners will be provided with the latest information on product updates through Iterated's Web site, early availability of select...

...from Iterated's corporate activities as well as advertising and marketing support.

"The Media Partners Alliance Programme will help customers **find** the **best** sources for **video compression**, original **video** producers and stock content providers," said Emma Heslop, Iterated's Media Partners Alliance Programme manager. "These three areas are the...

...eliminate this barrier and make it a great deal easier for customers' online applications to become video enabled."

Leading German **video compression** bureau, Digital Media Development GmbH (DMD), has recently signed up to the programme and has integrated Iterated's technology on its Web site at <http://www.dmd.de>. "ClearVideo is an excellent product offering the highest **quality** video at very small file sizes and is ideally suited for the delivery of video over the Internet," said Jorn...

12/3,K/21 (Item 7 from file: 636)

DIALOG(R)File 636:Gale Group Newsletter DB(TM)

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03345255 Supplier Number: 46877747 (USE FORMAT 7 FOR FULLTEXT)

**NBC DESKTOP VIDEO ADDS DIGITAL TO TECH SHOWCASE**

Interactive Video News, v4, n23, pN/A

Nov 11, 1996

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 680

... Bob Davis, Iterated's vice president of marketing and business development, said his company's inclusion indicates market demand for **compressed**, network **video** for corporate environments.

Iterated Systems' key product is Clear **Video**, a **video compression** application based on Iterated's submission to the MPEG-4 committee. The MPEG-4 effort is aimed at **determining** new standards for **low data**-rate **video compression**, and is expected to be complete in November 1998.

The product enables corporations to deliver high **quality** video to their networked clients (including over the Internet) at the very smallest file sizes and using all egresses of...

12/3,K/22 (Item 8 from file: 636)

DIALOG(R)File 636:Gale Group Newsletter DB(TM)

(c) 2004 The Gale Group. All rts. reserv.

02929997 Supplier Number: 45960709 (USE FORMAT 7 FOR FULLTEXT)

**NOTEBOOK: MPEG-1 AND MPEG-2 FORMATTED DIGITAL VIDEOS RATED BETTER THAN VHS IN PICTURE QUALITY**

Consumer Electronics, v35, n48, pN/A

Nov 27, 1995

Language: English Record Type: Fulltext

Document Type: Newsletter; Trade

Word Count: 108

... MPEG-1 and said bit rate of 3.0 Mbps "will provide the best improvement in perceived picture and sound **quality**" over current standards, although MPEG-1 compression delivered at 1.5 Mbps was found "very acceptable" and preferred over VHS. Study was made to **find best** standard for digital **compression** of **movies**, Pacific Telesis said. In tests, consumers viewed pictures in small groups on 3 sizes of new Sony Trinitron consumer TVs.

12/3,K/23 (Item 9 from file: 636)



DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

02417088 Supplier Number: 44800202 (USE FORMAT 7 FOR FULLTEXT)

**When redesign isn't necessary**

Desktop Publishing Commentary, v10, n3, pN/A

July, 1994

Language: English Record Type: Fulltext

Document Type: Newsletter; Trade

Word Count: 4342

... inch, therefore a scanned image pixel resolution of 120 dpi is best. It is also worth noting that image print **quality** is compromised if we allow Acrobat Distiller to subsample images as low as the default 72 dpi resolution. Dithered halftones...

...as medical imaging), very high resolutions may be needed, and the view is zoomable to see the detail. As for **data compression**, the **JPEG** method for continuous tone images may compromise viewing **quality** with its artefacts; but if detail is important, JPEG may be the only way to keep file **size small**. The designer must **assess** the trade-off.

Vector-drawn maps and diagrams can be zoomed too, and will redraw at the new resolution, so...

**12/3,K/24 (Item 1 from file: 16)**

DIALOG(R)File 16:Gale Group PROMT(R)

(c) 2004 The Gale Group. All rts. reserv.

04399942 Supplier Number: 46454433 (USE FORMAT 7 FOR FULLTEXT)

**MediaPaint nipped by buggy Windows port: Former Mac-only special effects applications now available for Windows**

InfoWorld, p111

June 10, 1996

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 1263

... bluescreen method used in the television and movie industry.

When you save your clip as a Video for Windows (.AVI) **file**, the **Video Compression** dialog box gives you several different options for setting the compression. You'll need to experiment to **find** the **compression** setting that works **best**. If you choose an incorrect compression setting, you'll see static lines running across the face of the clip when you play it back. It's a good idea to save your file and play it back to check the **quality** before you spend time creating effects.

MediaPaint could use a bit of improvement in its Windows implementation. I experienced frequent...

**12/3,K/25 (Item 2 from file: 16)**

DIALOG(R)File 16:Gale Group PROMT(R)

(c) 2004 The Gale Group. All rts. reserv.

02721835 Supplier Number: 43639643 (USE FORMAT 7 FOR FULLTEXT)

**TI, C-Cube to cooperate on JPEG, MPEG silicon**

Electronic World News, p1

Feb 8, 1993

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 594

... its own DSP expertise to produce more expensive programmable video processors.

The distinction accurately reflects a gradual separation of the **video - compression** market into at **least** three **identifiable** segments. One consists of communications applications - picturephone and teleconferencing, for example - using low-bit-rate, real-time codecs.

A second segment requires much higher performance. This is the programmable, full-resolution market, where algorithms may change and where image **quality** is paramount. Applications include research, and encoders for consumer **media** : compact disks, **compressed** cable TV, **video** dial-tone services and the like.

The third segment lies on the other end of the wire from these encoders...

12/3,K/26 (Item 3 from file: 16)  
DIALOG(R)File 16:Gale Group PROMT(R)  
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02710647 Supplier Number: 43623038 (USE FORMAT 7 FOR FULLTEXT)  
**C-CUBE, TI JOIN FOR SILICON SOLUTIONS BASED ON MPEG/JPEG**  
Electronic Engineering Times, p1  
Feb 1, 1993  
Language: English Record Type: Fulltext  
Document Type: Magazine/Journal; Trade  
Word Count: 1018

... on its own DSP expertise for more expensive programmable video processors.

The distinction accurately reflects a gradual separation of the **video compression** market into at **least** three **identifiable** segments. One segment consists of communications applications - picture-phone and teleconferencing, for example - using low-bit-rate, real-time codecs...

...second segment requires much higher performance. This is the programmable, full-resolution market, where algorithms may change and where image **quality** is paramount. Applications include research, and encoders for consumer **media** : compact disks, **compressed** cable TV, **video** dial-tone services and the like. This segment is being addressed, for instance, by startup GC Technology.

The third segment...

12/3,K/27 (Item 1 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
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08744225 SUPPLIER NUMBER: 18381073 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**MediaPaint nipped by buggy Windows port; former Mac-only special effects applications now available for Windows. (Strata's MediaPaint for Windows 95/NT) (Software Review) (Evaluation)**  
Dunn, Julie  
InfoWorld, v18, n24, p111(2)  
June 10, 1996  
DOCUMENT TYPE: Evaluation ISSN: 0199-6649 LANGUAGE: English  
RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 1331 LINE COUNT: 00102

... bluescreen method used in the television and movie industry.

When you save your clip as a Video for Windows (.AVI) **file**, the **Video Compression** dialog box gives you several different options for setting the compression. You'll need to experiment to **find** the **compression** setting that works **best**. If you choose an incorrect compression setting, you'll see static lines running across the face of the clip when you play it back. It's a good idea to save your file and play it back to check the **quality** before you spend time creating effects.

MediaPaint could use a bit of improvement in its Windows implementation. I experienced frequent...

12/3,K/28 (Item 2 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
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08518897 SUPPLIER NUMBER: 18079617 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**JPEG parameters determine compression-system performance. (Joint  
Photographic Experts Group compressor) (includes related article)**  
Grosse, Debora  
EDN, v41, n2, p141(6)  
Jan 18, 1996  
ISSN: 0012-7515 LANGUAGE: English RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 4243 LINE COUNT: 00344

... is considering this as an extension.  
To develop your own quantization tables, you need prototyping tools. These tools consist of **JPEG - compression** and -decompression software; a representative collection of images; and a display or other output device that models the one planned for your system. By altering the quantization tables and **compressing the images**, you can observe the trade-off between distortion and bit rate. (Figure 2 shows the effects of five quantization tables.) The challenge is gathering a sufficient collection of **images**.

If **compressed - image** size is not critical to your application, the choice of a quantization table is simple. If you require a **small compressed - image size**, however, you will **find** that achieving a quantization table that gives acceptable distortion over a range of test images takes a lot of experimenting...

...multipliers to the example luminance quantization table in the JPEG standard, Annex K. You manually adjust the multipliers until the **images compress** to the desired average bit rate. You can also try fine tuning the table by tweaking individual table values. If...

...can try quantization-table-design algorithms developed by the researchers at Unisys Corporation (Reference 4). These algorithms give a better **quality -vs-rate** trade-off than does scaling the example table.

Optimize Huffman tables

With any lossy compression technique, there are...

12/3,K/29 (Item 3 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
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07514208 SUPPLIER NUMBER: 16213166 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Plan your 2001 network now. (includes related article on wiring) (Cover Story)**  
Strauss, Paul  
Datamation, v40, n15, p32(4)  
August 1, 1994  
DOCUMENT TYPE: Cover Story ISSN: 1062-8363 LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 1493 LINE COUNT: 00116

... need optical for fast ATM or to overcome distance limitations.  
\* ATM BACKBONES as soon as they become practical. Until then, **find** the **best compressed** backbone hub you can or go with Fast Ethernet.  
\* ON THE WAN, Frame Relay for data, virtual private networks for...

...trend toward networked multimedia (meaning largely desktop videoconferencing or video plus networked applications). Yet today's technology can deliver high- **quality compressed video** at less than 1.5Mbps for full-screen applications. Switched 10Mbps LANs should be more than adequate, particularly if only...

12/3,K/30 (Item 4 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
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06168951 SUPPLIER NUMBER: 12823827 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**SMDS - a path to ATM and beyond. (Asynchronous Transfer Mode) (includes**

**related article on standards)**

Mollenauer, James F.

Business Communications Review, v22, n10, p33(5)

Oct, 1992

ISSN: 0162-3885

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 4177

LINE COUNT: 00327

... advanced services, such as those offered by ATM.

Other needs are not as well developed as LAN interconnection--for example, **compressed video** applications. Until recently, **video compression** was a rarity, usually reserved for videoconferencing between the specially constructed conference rooms of large corporations. However, this is changing dramatically, due to several factors:

- \* **Low -bit-rate video compression .**
- \* **Multimedia computing .**
- \* Distance education needs.
- \* Digital video processing and transmission.

Clearly, wide-area videoconferencing will become a larger market if line charges...

...brought down, and if ambient noise cancellation and good user interfaces eliminate the need for soundproof conference rooms. Currently, most **video compression** systems produce a fixed-rate output, ranging in speed from a voice channel to 45 Mbps, with corresponding differences in picture **quality** .

But the information content of a video picture can change from moment to moment. A scene with lots of detail...

**12/3,K/31 (Item 5 from file: 148)**

DIALOG(R)File 148:Gale Group Trade & Industry DB

(c)2004 The Gale Group. All rts. reserv.

05144245 SUPPLIER NUMBER: 10329059 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Catch multimedia wave, Comdex crowds told. (multimedia computing)**

Daniel, Dianne

Computer Dealer News, v7, n1, p1(2)

Jan 10, 1991

ISSN: 1184-2369

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT

WORD COUNT: 1284

LINE COUNT: 00104

... i750, the chip set is available for under US\$100 in volume quantities.

"We have really brought the price of **video compression** and decompression technology down to where we believe it can really have broad penetration in the PC field," said Intel...

...of full-motion video with audio on a compact disc.

C-Cube Microsystems of San Jose, CA, also offers digital **image compression** technology in its chip based on Joint Photographic Experts Group (JPEG) standards. According to a newsletter put out by Multimedia **Computing** Corp. of Santa Clara, CA, however, "JPEG is a much **lower** level of **compression** that DVI offers. ...As a result, **JPEG - compressed** motion **video** takes far more storage space and requires more bandwidth than CD-ROM (compact disc-read only memory) can deliver."

And...

...algorithm called JVC Extended. The company claims its technology will make it possible to reproduce moving images with a picture **quality** that exceeds the level of broadcast television images.

The bottom line is that multimedia technology is here, but it also...

**12/3,K/32 (Item 6 from file: 148)**

DIALOG(R)File 148:Gale Group Trade & Industry DB

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04593034 SUPPLIER NUMBER: 09023935 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Ion bombardment: a determining factor in plasma CVD. (silicon dioxide film**

**production)**

Hey, H.P.W.; Sluijk, B.G.; Hemmes, D.G.  
Solid State Technology, v33, n4, p139(6)  
April, 1990

ISSN: 0038-111X      LANGUAGE: ENGLISH      RECORD TYPE: FULLTEXT  
WORD COUNT: 3749      LINE COUNT: 00300

... by a remote plasma)[6], and TEOS with other oxidants like [NF.sub.3][7]. In all cases, the film **quality** and step coverage of the resulting films were found to be strongly dependent on process conditions.

We concentrated on the TEOS/oxygen chemistry and found that film **quality** measurements such as refractive index, wet etch rate in 6:1 ([NH.sub.4] F:HF) buffered oxide etch, film...

...FTIR are all strongly affected by the total reactor pressure and the frequency of the rf excitation. Since the best **quality** films are those which have a low wet etch rate (high **film** density) and **low compressive** stress, our **measurements** were limited to these characteristics. The process parameters (pressure, power, and frequency) were varied and their effects on film **quality** were analyzed. It will be shown that ion bombardment accounts for much of the variation in film properties.

The films...

**12/3,K/33      (Item 1 from file: 15)**

DIALOG(R)File 15:ABI/Inform(R)

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01809854 04-60845

**Storage**

Crooks, Roger; Bernstein, Charlie; Ott, Robert  
Broadcast Engineering v41n3 PP: 114-119 Mar 1999  
ISSN: 0007-1994 JRNL CODE: BRG  
WORD COUNT: 2072

...TEXT: differ from videotape cart machines in that they are not format specific and can store material (including metadata) in any **compression** format. Digital **data** can be transferred from server to data tape (or vice versa) at faster than play speed using secure file transfer...

... video server will offer a variety of compression formats to match your choice of VTR format and application. Compression format **determines** the efficiency of the storage. Currently MPEG offers the **highest compression** efficiency, provides better **quality** at lower data rates and is particularly well suited to transmission applications. That means more record time per storage dollar...

**12/3,K/34      (Item 2 from file: 15)**

DIALOG(R)File 15:ABI/Inform(R)

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01226077 98-75472

**MediaPaint nipped by buggy Windows port**

Dunn, Julie  
InfoWorld v18n24 PP: 111-113 Jun 10, 1996  
ISSN: 0199-6649 JRNL CODE: IFW  
WORD COUNT: 1123

...TEXT: bluescreen method used in the television and movie industry.

When you save your clip as a Video for Windows (.AVI) **file**, the **Video Compression** dialog box gives you several different options for setting the compression. You'll need to experiment to **find** the **compression** setting that works **best**. If you choose an incorrect compression setting, you'll see static lines running across the face of the clip when you play it back. It's a good idea to save your file and play it back to check the **quality** before you spend time creating effects.

(Table Omitted)

MediaPaint could use a bit of improvement in its Windows implementation. I ...

12/3,K/35 (Item 3 from file: 15)  
DIALOG(R)File 15:ABI/Inform(R)  
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01152749 98-02144  
**Innovation reigns at Milan's ITMA 95**  
Isaacs, McAllister III; Rozelle, Walter N Jr  
Textile World v145n12 PP: 44-70 Dec 1995  
ISSN: 0040-5213 JRNL CODE: TXW  
WORD COUNT: 11505

...TEXT: to be much that electronics can't accomplish when it comes to providing real-time information to the textile industry.

**Quality** control. You can now see exactly how fabric will look using yarns you've just produced without ever weaving or knitting the fabric.

Zellweger Uster, a name that's synonymous with **quality** control and assurance, continues to expand its capabilities in its field-to-fabric **quality** arena. The Uster Expert system not only **determines** faults in the production process, but it **compresses** data to the **minimum** required by the user, **determines** the cause of the fault and shows its influence in fabric, woven or knit.

Expert permits connection of the Uster...

12/3,K/36 (Item 1 from file: 647)  
DIALOG(R)File 647:CMP Computer Fulltext  
(c) 2004 CMP Media, LLC. All rts. reserv.

01248827 CMP ACCESSION NUMBER: NWC20020218S0026  
**SHRINKING THE VIDEO: HOW CODECS WORK - Before you even start to research streaming-media solutions, take some time to understand the variety of open codec standards. You'll be glad you did.**

Darrin Woods  
NETWORK COMPUTING, 2002, n 1304, PG77  
PUBLICATION DATE: 020218  
JOURNAL CODE: NWC LANGUAGE: English  
RECORD TYPE: Fulltext  
SECTION HEADING: WORKSHOP - DIGITAL CONVERGENCE  
WORD COUNT: 2172

... may take shortcuts to get to the end result, leaving a video signal that does not retain all the original **quality** and clarity or isn't compressed as tightly. The trick is to **find** the balance between small **files** and real-time **compression** that gives the **best quality**.

Video codecs are typically classified as lossy or lossless. Typically, lossy means a visible loss of **quality**, whereas lossless defines an image with imperceptible loss. Truth be told, most video codecs are lossy to some extent. Because video **quality** is subjective, some amount of loss is acceptable without degrading the experience.

The MPEG family

The most recognizable form of...

12/3,K/37 (Item 2 from file: 647)  
DIALOG(R)File 647:CMP Computer Fulltext

(c) 2004 CMP Media, LLC. All rts. reserv.

00535513 CMP ACCESSION NUMBER: EET19930201S5804

**MPEG picture's in motion - C-CUBE, TI JOIN FOR SILICON SOLUTIONS BASED ON  
MPEG/JPEG**

BRIAN FULLER ; RON WILSON

ELECTRONIC ENGINEERING TIMES, 1993, n 731, 1

PUBLICATION DATE: 930201

JOURNAL CODE: EET LANGUAGE: English

RECORD TYPE: Fulltext

SECTION HEADING: News

WORD COUNT: 1036

... on its own DSP expertise for more expensive programmable video processors.

The distinction accurately reflects a gradual separation of the **video compression** market into at **least** three **identifiable** segments. One segment consists of communications applications-picturephone and teleconferencing, for example-using low-bit-rate, real-time codecs. This ...

...second segment requires much higher performance. This is the programmable, full-resolution market, where algorithms may change and where image **quality** is paramount. Applications include research, and encoders for consumer **media** : compact disks, **compressed** cable TV, **video** dial-tone services and the like. This segment is being addressed, for instance, by startup GC Technology.

The third segment...

**12/3,K/38 (Item 1 from file: 674)**

DIALOG(R)File 674:Computer News Fulltext

(c) 2004 IDG Communications. All rts. reserv.

080247

**Streaming 101: The Basics**

Journal: Network World Page Number: 41

Publication Date: December 20, 1999

Word Count: 529 Line Count: 50

Text:

... Internet.The most significant caveat to the use of streaming media in place of traditional videotape or broadcast mediums is **quality** of playback. According to Optibase, a video hardware company, uncompressed video running full screen, full motion (30 frames per second...

... network can result in a jittery picture and out-of-sync audio playback. Network managers will need to experiment to **find** the **best** combination of **video compression** for playback **quality** . It may also be worthwhile to encode multiple versions of **content compressed** at different rates to address different bandwidth and companywide traffic conditions, or to develop audio-only or multimedia presentations for...

15/3,K/1 (Item 1 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

01494341 SUPPLIER NUMBER: 11674564 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Image-In-Color: desktop darkroom. (image processing software from Image-In  
Inc.) (Software Review) (Product Reviews) (Evaluation)**  
Glinert-Stevens, Susan  
PC Sources, v3, n1, p401(1)  
Jan, 1992  
DOCUMENT TYPE: Evaluation ISSN: 1052-6579 LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 837 LINE COUNT: 00066

... 7 million colors. It supports over 11 different file formats,  
including .IMG, .PCX, .TGA, and .TIF with several types of **compression**.  
**Image -In** will also support plug-in format modules written by third-party  
developers. While it can't import .EPS files...

...right mouse button invokes fly-out menus for controlling the parameters  
of the current tool, such as spacing, fadeout, line **weight**, and edge  
appearance. Many tools have an adjustable pressure setting that **determines**  
the **density** of the paint placed on the **image**; this setting is linked  
to the Wacom drawing pen if you have one installed.  
Besides being fast, diverse, and sensitive...

15/3,K/2 (Item 2 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

01365819 SUPPLIER NUMBER: 08669814 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Solving your image problem: three conversion utilities for graphics files.  
(overview of three evaluations of graphics conversion packages) (includes  
related article on Editor's Choice) (evaluation)**  
Raskin, Robin  
PC Magazine, v9, n14, p281(8)  
August, 1990  
DOCUMENT TYPE: evaluation ISSN: 0888-8507 LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 1098 LINE COUNT: 00087

... one shade of black. In practice, therefore, converting color to  
monochrome requires dithering, in which the colors of the original **image**  
are replaced with dot patterns of greater or lesser **density**, giving the  
appearance of **gradual** shading.

Dithering is, at best, an inexact science. When dithered, color  
**images** tend to lose details, and moire patterns (an unaesthetic swirling  
in the patterns of dots) can occur when dithering algorithms...

...These utilities also let you scale or rotate the images, invert the  
pixels on black-and-white images, and store **TIFF** files in either  
**compressed** or uncompressed format. On Macintosh conversions, you usually  
have the option of adding the header that the Macintosh expects to...

15/3,K/3 (Item 1 from file: 621)  
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)  
(c) 2004 The Gale Group. All rts. reserv.

03132586 Supplier Number: 83454267 (USE FORMAT 7 FOR FULLTEXT)  
**DivXNetworks Releases Revolutionary Suite of Video Compression  
Technologies; Complete DivX(TM) 5.0 Product Line Offers Quantum  
Improvements in Speed, Performance and Visual Quality, Debuts First  
Version of DivX(TM) Video Technology Designed for Professional Users.**  
PR Newswire, pLAM04104032002  
March 4, 2002  
Language: English Record Type: Fulltext



Document Type: Newswire; Trade  
Word Count: 815

... for the seamless distribution and playback of true DVD-quality video over broadband networks, DivX 5.0 is capable of **data compression** ratios that exceed virtually any technology available today. With the advanced tools of DivX Pro, video professionals can achieve equivalent...

...of data through a revolutionary process called Psychovisual Modeling. Using knowledge of the Human Visual System (HVS), DivX 5.0 **assigns** a Psychovisual **Complexity Rating** (PCR) to each **video** frame, and removes data that can't be seen by human eyes in full-speed **video** sequences. This technology improves the efficiency of video data allocation and increases the overall **video** quality.

DivX **video compression** technology has become the de facto standard for high-quality IP video, with over 50 million downloads and an average...

**15/3,K/4 (Item 1 from file: 636)**  
DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

03531358 Supplier Number: 47296618 (USE FORMAT 7 FOR FULLTEXT)  
**Short Takes on High Yields**  
High Yield Report, v8, n151, pN/A  
April 14, 1997  
Language: English Record Type: Fulltext  
Document Type: Newsletter; Trade  
Word Count: 119

... with Parker & Paisley to form Pioneer Natural Resources Co. The new company is likely to be bumped up to investment- **grade**

General Instrument Co. recently introduced new **video compression** technology under the name "Digital **Density** "

Moody's Investors Service **assigned** a Bal **rating** to the 13 1/2% senior secured notes of the Mohegan Tribal Gaming Authority. The notes are due in 2002...

**15/3,K/5 (Item 1 from file: 148)**  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
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06185008 SUPPLIER NUMBER: 13237106 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Banner Blue Movie Guide. (data base) (Software Review) (Evaluation)**  
Sears, David  
Compute, v14, n11, p150(1)  
Dec, 1992  
DOCUMENT TYPE: Evaluation ISSN: 0194-357X LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 590 LINE COUNT: 00043

Thanks to **data compression**, more than 9000 **movie** profiles fit comfortably on your hard drive--that's more titles than most mom-and-pop stores carry. Floppy users can optionally install **Movie** Guide on two high- **density** disks; access time increases but remains tolerable. Within each profile you'll **find** the **movie**'s director and stars, a **rating**, and a brief plot summary. Details available from a submenu include critics' opinions, the level of box-office success, country...

**15/3,K/6 (Item 1 from file: 647)**  
DIALOG(R)File 647:CMP Computer Fulltext  
(c) 2004 CMP Media, LLC. All rts. reserv.

01102342 CMP ACCESSION NUMBER: OEM19960901S0022  
**The Land Beyond Benchmarks - The personal computer has made huge strides**

in performance whether measured in Mips, Megahertz or any other metric. But, as it moves into multimedia, the PC heads into a terrain that few can quantify

Michael Slater

OEM MAGAZINE, 1996, n 431, PG64

PUBLICATION DATE: 960901

JOURNAL CODE: OEM LANGUAGE: English

RECORD TYPE: Fulltext

SECTION HEADING: Features

WORD COUNT: 2953

Making matters worse, **measuring multimedia** performance is a far more **complex** undertaking than **scoring** performance on productivity applications such as spreadsheets. For example, one implementation may shine on **video** decompression but be lackluster at three-dimensional processing; another, great at 3-D but unable to handle MPEG-2 without...

...PC OEMs many opportunities for differentiation: Intel Corp.'s MMX instruction-set extensions, a plethora of 3-D accelerator and **video - compression** chips, programmable multifunction **multimedia** accelerators, the emerging Accelerated Graphics Port interface and the new DirectX APIs and Talisman architecture from Microsoft Corp. These components...